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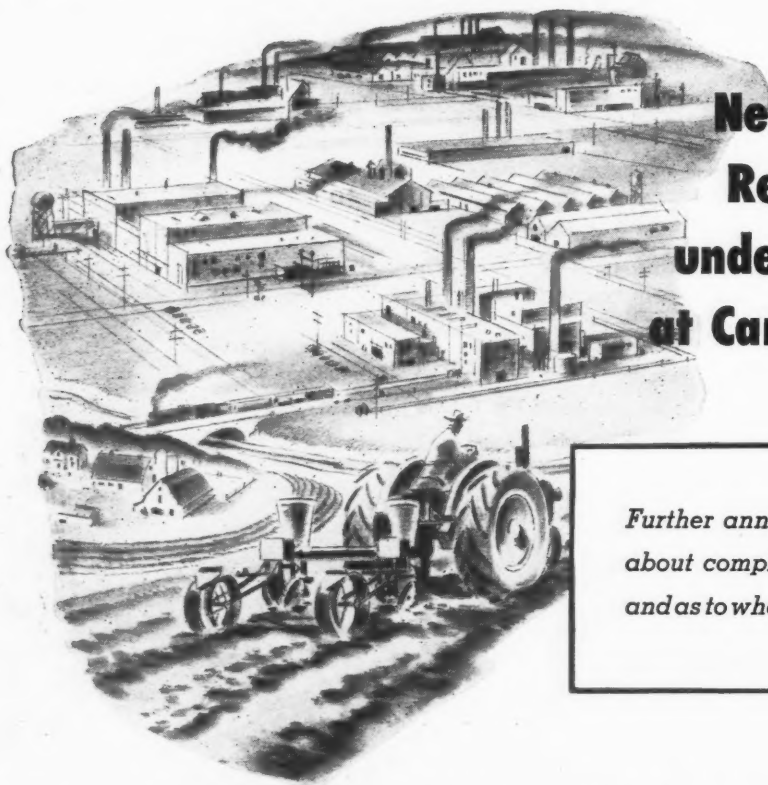
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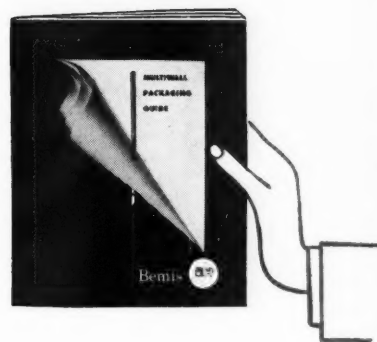
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UNITED STATES STEEL

## In this issue . . .

**Conventions are over** and everyone is back at work. Muscles might still be aching, but it's nice to reminisce on enjoyable days spent at the Homestead or the Greenbrier. Those of you lucky enough to attend the NFA or APFC gatherings, and those who stayed home to keep the factories running, should enjoy the resume of both conventions that begins on page 26.

**So that you** can get an idea of the current arguments against the use of pesticides, the recent testimony of Louis Bromfield, writer and farmer, before the Delaney Committee, is included in this issue on page 20. This is the first of a series designed to present the arguments from both sides of the pesticide fence. Next month we hope to publish the Delaney Committee testimony of Dr. Fred C. Bishopp, assistant chief of the Bureau of Entomology and Plant Quarantine.

**A bewildering number of releases** have been issued by OPS relating to price controls. A staff report on page 11 is designed to clear away some of the clouds and bring you up-to-date on just where the farm chemicals industry has been placed in the price control field.

**Grasslands and farm chemicals** will soon be working together for a more permanent American agriculture. At a recent Washington conference, top officials of many business, government, and private organizations met to discuss and develop the National Grasslands Program. On page 17 the statements of several key individuals, including those in your industry, tell what the program is and what it means to farm chemical producers. Agricultural leaders say that there is a million acres, a great production potential, waiting to be developed through the use of farm chemicals and sound agricultural practice.

**The annual fertilizer consumption report** for the United States and its territories is included in the Industrial News section on page 31. It shows a trend towards higher analysis mixtures and the greater use of separate materials in farm mixing and direct field application.

**Trends and Forecasts** by Baily and Lerch on page 7 bring you the latest on the nitrogen situation. As you know, USDA officials are alarmed over the impending shortage of this material for the next crop season, and are urging defense people to act now so that maximum crop production can be maintained.

JUNE, 1951

# American Fertilizer & Allied Chemicals

*the magazine of farm chemicals*

Established 1894

PIONEER JOURNAL OF THE FARM CHEMICALS INDUSTRY

Vol. 114

JUNE, 1951

No. 6

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## Cover Story

A close-up of grass. The farm chemicals industry is taking a closer look at grasses and legumes now that farmers are becoming more aware of their cash-crop value. Like other crops, grasses and legumes—in many regions—need proper fertilization and protection from insect and weed pests. Properly selected, grown and cared for, they can be as lush as those pictured on this month's cover. For a close-up of what the 1951 Grasslands Program means to the farm chemicals industry, see page 17.

USDA photo courtesy American Plant Food Council

## Published Monthly by WARE BROS. COMPANY

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## The "anti"-pesticide case

Beginning on page 20 of this issue is Part I of a series of articles based on testimony before the Delaney Committee investigating the use of chemicals on food products. Recently, the Committee heard Louis Bromfield, well-known writer and operator of "Malabar Farms," testify against the use of farm chemicals. In this first installment of our series on the hearings, we have reproduced, as fully as space allowed, Mr. Bromfield's statements.

The testimony is presented here because it gives the farm chemicals industry a summary of the arguments presently being used against it as well as against professional scientists and the practices of modern agriculturists. In succeeding issues of this magazine will be presented testimony by Dr. Fred C. Bishopp, Assistant Chief of the USDA's Bureau of Entomology and Plant Quarantine. Much of Dr. Bishopp's testimony deals with the positive advantages of chemical pest-control and is not concerned with directly answering statements made by Bromfield and others. It is hoped, however, that cross-examination by the Committee in hearings yet to be held will bring out the attitudes of Dr. Bishopp and his colleagues on at least some of the many points covered in Mr. Bromfield's statements.

It must be remembered that the remarks and writings of Bromfield and members of the "organic" school of farming receive wide publicity. Critics of the farm chemicals industry are a highly active and voluble group. Therefore, at the conclusion of this series, it will be made available in the form of reprints, which we hope will be of value as educational instruments on the value and proper use of the right kinds of pesticides.

Most of the arguments presented by the "organic" school as well as those given by Bromfield are masterpieces of fact confounded with fancy; truths colored by superstition; and learned dissertation coupled with useless discussion. It is not always easy to answer such an array of studied confusion. Perhaps that is why most scientists—busy discovering demonstrable truths—have preferred to remain mute rather than cross swords with the cultists whose main occupation seems to be to carry on endless arguments that lead nowhere.

An example of the methods used by the anti-chemical group is Bromfield's attack on DDT. Without regard for the unparalleled benefits derived from its use, Bromfield states (almost as though he had discovered the fact himself) that DDT is absorbed by

cattle and excreted in the milk. No responsible scientist or manufacturer or dairy operator will argue with that. But by his manner of presentation, Bromfield implies a certain irresponsibility on the part of agricultural scientists. He neglects to report that as soon as it was established (at the Oklahoma Experiment Station) that DDT could, in fact, be absorbed and secreted by dairy cattle, the Bureau of Entomology and Plant Quarantine recommended DDT not be used to treat dairy cows or dairy barns. They recommended instead—and dairy operators adopted—the use of the more costly, less toxic, and non-accumulative methoxychlor and pyrethrum.

Using the single fact of the accumulative characteristics of DDT, Bromfield applies that peculiarity to all pesticides. Worse still, Bromfield proceeds to assemble a case against DDT that must seem very plausible to the uninitiated. He blames almost every unexplained ache, pain, illness, and infirmity of man on DDT. The plausibility of his argument stems from Bromfield's high regard for coincidence as a method of scientific proof. He correlates, for example, the appearance of the intestinal disorder known as Virus-X with the widespread use of DDT.

"It is regarded," says Bromfield (speaking now as a diagnostic physician rather than an entomologist-without-portfolio) "as a new form of illness and it appeared simultaneously with the widespread use of DDT and similar compounds as insecticides.

"It is not impossible that some cases of sickness and partial paralysis diagnosed as poliomyelitis or infantile paralysis are not the true diseases at all but merely manifestations of poisons used commonly in and around dairies."

This kind of talk—coming from a Pulitzer prize winner—could scare the daylight out of anyone with a child accustomed to consuming large quantities of milk. It could arouse the country's voters to demand legislation that would outlaw the use of every kind of poisonous substance whatever in the growing or preparation of food. It could, thereby, do irreparable harm to the greatest food-producing nation in the world today.

Bromfield's propensity for using right facts to arrive at wrong conclusions reminds me of a story told by a professor of statistics. According to the story, a certain town in Scandinavia noticed that in a new housing development area there was an exact correlation between the number of new chimneys built and the number of children born in the neighborhood. Upon investigation, it was discovered that each chimney housed a stork! To outlaw pesticides to control unexplained diseases would be just as silly as trying to control the birthrate by banning storks.

—A. M. BRODINE

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# Trends & Forecasts

An Exclusive and Timely  
Report from Washington  
by Fred Bailey & Don Lerch

Prospect of a half million ton nitrogen shortage has USDA officials fighting mad. "We're going the limit to get more production," they declare.

Caged in for months by the Army and NPA, the Department of Agriculture is touching off a series of blasts which threaten to overshadow the much discussed sulphur explosion. The campaign to get more nitrogen is being carried on by Agriculture's top brass led by the Secretary.

Prolonged Army opposition to the reopening of its Morgantown nitrogen plant upset Agriculture's timetable for 1952 crop production. The Department considers this a major blow to the next year's farm operations.

Crop planners are setting their sights on another 16-million bale cotton crop, more wheat, soybeans, and corn. Officials are not as worried over getting the acreage as they are about the possibility of low yields resulting from a fertilizer shortage, chiefly nitrogen. This advance planning, ahead of routine schedule, is a part of the master plan to get action fast. "One ton of nitrogen fertilizer equals 14 acres of good farm land," will be their cry.

Morgantown is considered the earliest source of relief and USDA officials believe it will take a "miracle" of management and engineering to get actual production before the middle of next year. In the meantime, military demands for nitrogen are expected to increase.

NPA reluctance to grant "certificates of necessity" for new nitrogen plants has the Department mystified. Questions of construction loans, amortization, and anti-trust are being hurled back and forth in heated arguments.

USDA is angling for NPA's authority to determine "who's who" in the nitrogen picture. Some farm organization leaders are quietly backing this move, but want to know why it is being blocked and by whom.

Cautious optimism over sulphur is being whispered in top mobilization circles, not for the immediate future but for the long pull. Basis for the hope appears founded on bringing in new high producing domes in undeveloped regions of North America.

Leaders of the U. S. sulphur industry are attacking the present shortage by increasing production and calling for reduced exports. They are in the middle of a growing "tug of war" and charge that price restrictions hamper their efforts to further increase production. Mobilization officials turn thumbs down on reducing exports, and are chilly toward price increases.

Sulphur importers are not moving to relieve the drain on the U. S. with the speed called for by many defense officials. Some Washington estimates place the 1951 free-world sulphur shortage at one million tons, equivalent to about one fifth the current U. S. annual production. Importers have until October 31 to report to the International Materials Conference what progress, if any, they are making to get sulphur from sources other than the U. S.

Government subsidies for high cost U. S. sulphur production are being given more than passing attention by some mobilization officials and congressmen. Some farm organization leaders would support a sulphur-subsidy proposal.

Fertilizer conservation plans are being pushed by the USDA to partially offset the prospect of short supplies for the oncoming crop year. W. R. Alstetter, H. H. Shepard, and L. C. Porter of PMA are working closely with research officials to shape plans aimed at telling farmers how to get the greatest production from every bag of fertilizer. Analysis, timing of application, and placement of fertilizer are among the conservation measures to be discussed.

Ultimately, all USDA field agencies are expected to be given a fertilizer conservation role. Emphasis will be toward "prescription usage," coupled with general soil conservation practices.

Cedric G. Gran, heading OPS fertilizer pricing also has the door open for industry experienced manpower. He is obviously elated at the transfer of plant food problems from the OPS Restaurant Section to Thomas H. McCormack's Rubber, Chemicals and Drugs Division.

A new rash of industry advisory committees is breaking out in OPS. Negotiations are underway to include: phosphates, nitrogen, potash, mixed fertilizer, pesticides, and agricultural liming materials.

The Delaney investigation of chemicals in and on food has failed to uncover any serious charges against fertilizers in the opinion of most Washington observers. They see the pesticide industry in a much more difficult position, however.

Apparent absence of a united "bold front" by USDA witnesses is interpreted in Washington as stimulating renewed efforts for more legislation in the pesticide field. Department officials themselves have not determined a general policy they can all support. Some are looking to industry for signals they believe long overdue.

New Texas herbicide law has lawyers speculating whether it has established a precedent through the provisions which exact a fee on a per acre basis. The law provides authority for charging a permit fee whether the "hormone-type herbicide" is applied by the land owner or a custom applicator. The Texas law reportedly surpasses California controls which have been considered by many as the most severe in the country.

Additional pesticide laws or important changes are reported for at least a dozen states including: Arkansas, Alabama, Utah, New Mexico, Oklahoma, and Rhode Island. Some laws call for increased registration fees, changes in labeling practices, and extended control.

Members of the National Agricultural Chemicals Association will receive the Association's new law guide revised as of May, 1951. The Guide shows all federal and state law governing economic poisons and herbicides, plus extent of coverage, and in most cases official citation. Law guide will be available to non-members at \$50 for the multi-volume set.

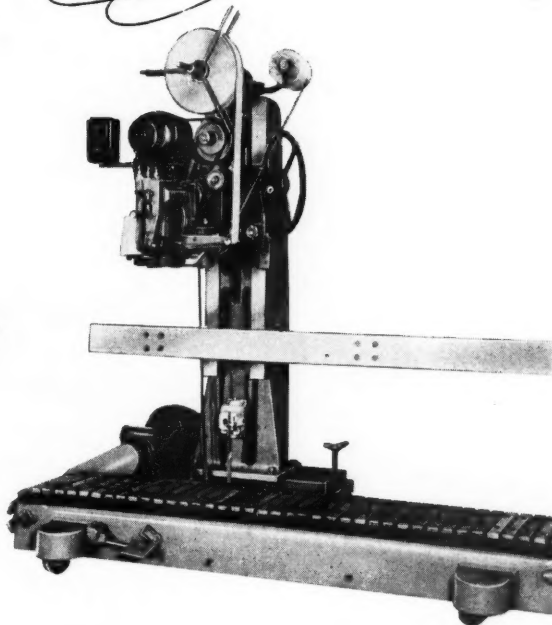
New plant disease forecasting service is being studied by Beltsville scientists. Dr. Paul R. Miller is experimentally correlating disease outbreaks in cereal crops with long range weather forecasts. This is similar to the research leading to the disease forecasts for tobacco, tomatoes, and cucurbits which have proved to be of considerable value to both industry and growers.



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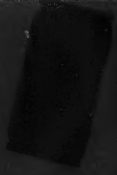
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# CPR-22 Hits Farm Chemicals

**Without notifying manufacturers directly, OPS nevertheless expects industry to comply fully**

## **Staff Report**

**F**ERTILIZERS and pesticides sold to farmers are now considered to be "commercial sales" by the Office of Price Stabilization. Thus, by a simple process of itemizing them in one column rather than another, OPS has made farm chemicals, unless specifically exempted, subject to the price ceilings from which they were said to be excluded only a few weeks ago. A list of exempt chemicals is included at the end of this article.

Although this move may have been a surprise to the industry, OPS regards it as in line with their declared policy of trying to "equitably regulate" as many prices as possible. The farm chemicals industry has good cause to be surprised by the new interpretation of Controlled Price Regulation 22. Until almost the day before the new interpretation was released, OPS official spokesmen repeatedly stated that mixed fertilizers and other farm chemicals were not subject to CPR-22.

## **No "Official" Notice**

When the news came, it was not in the form of an official release. OPS headquarters in Washington merely telegraphed its regional office in Atlanta, Ga., informing

them that "sales of mixed fertilizer by a manufacturer to a farmer *are not sales at retail* as defined in Section 47 and clarified in Interpretation 15 of CPR-22. They are commercial sales."

Informing us of the message, the National Fertilizer Association declared that the telegram constitutes an official ruling and is binding as of May 29, 1951. Later, OPS headquarters in Washington confirmed this by telephone.

## **CPR-22 Background**

Last January, when the 81st Congress passed the Defense Production Act, it gave the President power to set up controls on almost every segment of the economy. This included power to set ceiling prices on any or all commodities, as well as other broad powers. The exact method by which the President might exercise his powers was left for him to decide. Subsequently, the President appointed Michael V. DiSalle to head the newly established Office of Price Stabilization.

Since that time, OPS has issued many orders and regulations, interpretations and clarifications of those orders and regulations, and appendixes and supplements to them.

At first, the General Ceiling Price Regulation, issued on January 26, imposed a general "freeze"

on prices at all levels of production and distribution. OPS said this was a stop-gap measure to put the brakes on ballooning inflation. Idea was to "hold the line" until specific regulations properly adapted to the needs of individual industries could be worked out and applied. As each of these specific price regulations were issued, they would replace the provisions of the general price freeze. CPR-22 is one of these. There will be more later.

CPR-22 sets ceiling prices for many manufactured products at pre-Korean levels PLUS actual increases in costs of labor and material. Ordered to set ceilings on prices, OPS obviously had to start somewhere. That is why they set up "base periods."

## **Deadline July 2**

The deadline date for compliance with CPR-22 has been changed from May 28, to July 2. This still does not give manufacturers much time in which to procure forms, read the regulations, calculate their ceiling prices and get them in the mail before the deadline.

Regulation-22 covers sales by all manufacturers in the continental United States, including exporters, *except* sales at retail and sales of goods specifically exempted. Farm chemicals were declared to be sales at retail if sold to farmers until

# HOW TO FIGURE YOUR COST ADJUSTMENTS

ANNUAL REPORT  
1950  
EMPIRE  
MANUFACTURING  
COMPANY

\$300,000  
TOTAL FACTORY PAYROLL

\$1,000,000  
NET SALES

LABOR COST RATIO = 30%  
 $(\$300,000 \div \$1,000,000)$

JUNE  
30  
1950

WEEKLY PAYROLL - \$6,000

SAME PAYROLL AT MAR. 15<sup>TH</sup>  
WAGE RATES -- \$6,500

WAGE INCREASE FACTOR = 10%  
 $(\$600 \div \$6,000)$

MARCH  
15  
1951

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ANNUAL REPORT  
1950  
EMPIRE  
MANUFACTURING  
COMPANY

NET SALES  
\$1,000,000

MATERIALS	AMOUNTS	COST AT END OF BASE PERIOD	CUT-OFF DATE	COST AT CUT-OFF DATE	CHANGE IN NET COST	COST INCREASE
Fabric	400,000 yds	\$ .20 yd.		\$ .30 yd.	\$ .10 yd.	\$40,000
Wire	100,000'	.03 ft.		.04 ft.	.01 ft.	\$1,000
Fittings	200,000	.02 ea.	12/31/51	.04 ea.	.02 ea.	\$4,000
Tape	100,000 yds	.04 yd.		.09 yd.	.05 yd.	\$5,000
						<b>\$50,000</b>

**SUBTRACT THESE FROM THESE**

**MULTIPLY THESE BY AMOUNTS**

**ADD RESULTS**

**DIVIDE TOTAL** →  $\$50,000 \div \$1,000,000 = 5\%$

YOU MAY ADD 5% to your highest base period selling price  
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**Lion Aqua Ammonia**—This product is available to manufacturers for use in the formulation of mixed fertilizers or for sale as direct application material. Normally about 30% ammonia, its content can be controlled by order to suit your needs.

**Lion Nitrogen Fertilizer Solutions**—Made specifically for the manufacturing of mixed fertilizers, these products supply both ammonia nitrogen and nitrate nitrogen in the ratios desired. They are easily handled and available in three types designed for varying weather conditions, and for formula requirements in the production of fertilizers that cure rapidly, store well and drill evenly.

**Lion Ammonium Nitrate Fertilizer**—The improved spherical white pellets in this product contain a guaranteed minimum of 33.5% nitrogen. They flow freely, resist caking and store much better. Lion Ammonium Nitrate Fertilizer is shipped in 100-pound, 6-ply bags with two moisture-proof asphalt layers.

**Lion Sulphate of Ammonia**—This new, superior-type sulphate is guaranteed to contain a minimum of 21% nitrogen. Through special conditioning of the larger crystals, moisture and free acid content is greatly reduced. These factors, together with the special coating applied, make for greater resistance to caking in shipment or in storage. This product flows freely. It is shipped in bulk and in 100-pound, 6-ply bags laminated with asphalt.

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Technical advice and assistance to fertilizer manufacturers in solving their manufacturing problems is available for the asking. Just write.

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EL DORADO, ARKANSAS

the recent interpretation. Until then agricultural chemicals sold to farmers were considered sales at retail. If you merely package, label, market, or sell a commodity or *if you combine commodities without substantially altering them* you are not considered by OPS to be a manufacturer.

### Who Reports

If, during the last fiscal year, your gross sales were less than \$250,000 you don't have to use CPR-22. You can remain under the General Ceiling Price Regulation (GCPR) initiated last January. However, you can, if you wish, elect to work under CPR-22 even though your gross sales were less than \$250,000. If over that amount, you have no choice and must file ceiling prices for your different commodities according to CPR-22.

OPS says that the formula of CPR-22 is a return to pre-Korean prices adjusted for increases in manufacturing costs that have occurred since the shooting began. "Between July 1949 and June 1950," says one OPS release, "prices and costs were in general balance yielding satisfactory margins to most industries. If that margin was sufficient, then the formulas should be sound for current production."

Just how sound that basic idea is when applied to the farm chemicals industry, only time can tell. In the meantime, increases in prices are limited to advances in manufacturing costs affecting labor materials actually required for production. Several methods of calculating costs are provided to meet needs of manufacturers with different accounting and record systems.

Increases in overhead costs can't be counted in, by the way. OPS says that such costs cannot be allocated to individual commodities. (No mention is made of those manufacturers who make only one commodity in each category.) Unit overhead, reasons OPS, varies with volume; for most manufacturers output has gone up since Korea and unit overhead cost has declined.

To operate under CPR-22 you must first get the necessary forms and regulations. The most important of these is Form 8. You'll need a separate form for each

category or product line you sell. Examples of three different categories are: (1) mixed fertilizers, (2) unmixed fertilizers, and (3) pesticides. In order to be sure you understand just what to report and how to report it—you will also probably want to have copies of the original orders and supplements. All of these together with as many copies of Form 8 as you need, can be obtained from any OPS office or by writing to the Office of Price Stabilization, Washington 25, D. C.

After you get the forms and know the regulations, you are ready to calculate your ceiling price. To do this, there are six steps: (1) pick your base period, (2) estimate your 1950 dollar sales, (3) figure your labor cost adjustment factor, (4) figure your materials cost adjustment factor, (5) work out the price adjustment ratio, and (6) certify your statement.

According to the regulation, "the" base period upon which manufacturers are to calculate their ceiling price is April, 1950, through June 24, 1950. Actually, there are four base periods from which to choose. They are: July 29 through September 30; October 1, 1949 through December 30, 1949; December 31, 1949, through March 31, 1950; and April 1, through June 24, 1950. From these four calendar quarters, you can choose, as your base period, the one you like best.

### Pick Best Period

While OPS is basically interested in lowering prices, it nevertheless permits manufacturers to choose periods in the year July 1949 to June 1950 during which the selling price was most advantageous to the manufacturer. The period you pick as your base, therefore, may be the one in which you charged the highest price to the largest class of buyer. If you made no sales to a given class of buyer, you apply your usual differentials in effect during your base period. If you are selling to a new class of customer, you determine your ceiling price in line with ceiling prices otherwise established by CPR-22. That price is established by OPS as "the ceiling price of your most closely competitive

seller in the same class, selling the same commodity to the same class of purchaser."

Your 1950 dollar sales must be estimated separately for each category, otherwise you will have no way of calculating the labor and materials cost adjustment factors. How to calculate the adjustment factors for increases in labor and materials costs are shown in the chart on page 12, supplied by the Office of Price Stabilization.

The computation for labor cost adjustments may apply to the entire business or to a unit of it which regularly maintains separate records. "Factory payroll" does not include labor used in general administration, sales and advertising, or research or major repairs or replacement of plant or equipment, or in expansion. "Factory payroll" does include labor used in factory supervision, packaging, and handling, ordinary maintenance and repair, and in materials control, testing and inspection.

### Cost Adjustments

Materials cost adjustments are calculated by any of four methods. They are: (1) the aggregate method, (2) the individual commodity method, (3) the product line method, and (4) the composite bill of materials method. You should use the one best suited to your business.

Briefly summarized, they are as follows:

(1) **Aggregate Method**—Lets you measure increases in the costs of your manufacturing materials on the basis of a unit of your business if that unit is not larger than a single plant. If you have only one plant, this method may be applied to your entire business. The use of this method is limited if you have had significant substitution of lower-priced materials.

(2) **Individual Commodity Method**—Intended for use on an individual commodity, this method is based on the increase in your unit manufacturing materials cost for that commodity. This is the method to use if each of the commodities you produce has had substantial different material cost increases since the end of your base period. However, this method requires a separate (See page 44)

# The 1951 Grasslands Program

What it means to the industry,  
to agriculture and the national defense

An exclusive panel discussion by top leaders in  
government, industry, and agriculture

**F**OR DECADES, agronomists, soil conservation men, and others have been begging for more and better grasslands. Soil conservationists see grass as a means for holding precious top soils in place on farmlands. Agronomists see grass in its diverse forms as a source of much-needed nutrients and valuable fibers. Farmers, in many cases, have continued to see grass as something to let grow on land considered unfit for anything else. City folks see grass as something that makes nice paving for picnic grounds and golf courses.

Good grass has much to recommend it. Briefly, increased quantities of improved grass means more food and fiber at lower production cost. That the grasslands program is taken seriously by responsible people

is attested by a recent meeting in Washington, D. C.

Invited to the meeting of May 25, by Secretary of Agriculture Charles F. Brannan, representatives of 60 national organizations from agriculture, government, and industry attended. The program, an outgrowth of over two years of national and regional efforts, is under the joint sponsorship of USDA and the Association of Land Grant Colleges and Universities.

To get an immediate picture of the scope and nature of the present grasslands program, AMERICAN FERTILIZER AND ALLIED CHEMICALS assembled a forum of top leaders in government, agriculture, and industry. This is what they think about the program:

## First: Defense by Charles E. Wilson

*Director of Defense Mobilization*



Charles E. Wilson

The National Grasslands improvement Program is important to the National Defense for at least two reasons: first, grasslands products are a major raw material in the production of beef; second, improved grasslands can make more acres available for other crop production.

Grasslands products are of almost no direct use to human beings; but as feed for animals and poultry they result in meat, milk, eggs, and other important and highly concentrated foods which are essential to our population.

The Nation has more than a billion acres of grasslands and these constitute one of the greatest undeveloped agricultural resources. It is to the improvement of these acres that the National Grasslands Improvement program is directed.

The Grasslands Program is a truly cooperative program in the national interest in which the U. S.

Department of Agriculture, the state agricultural experiment stations, the state agricultural extension services and many branches of industry are participating. All will encourage grass improvement through such measures as fertilizing, reseeding and using improved varieties.

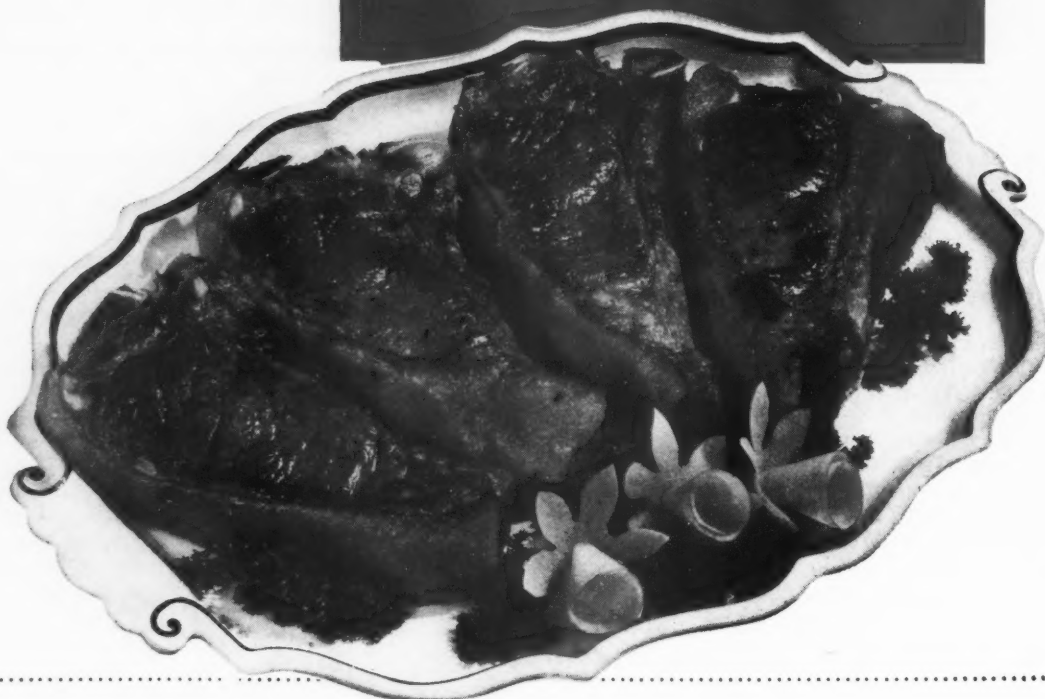
In these times of emergency, the nation needs all the land it can spare for cultivated crops. This makes grasslands improvement important in the defense program because by making our hillsides and rough land produce more grass and forage, we can have more of the better land for cultivated crops. For the long pull, too, growing grass holds the soil and maintains a reserve of fertility against the needs which lie ahead.

Finally, grasslands improvement has a bearing upon manpower. Grass which livestock can "harvest" themselves calls for less power than cultivated crops.

Food production is essential in our mobilization program and grasslands improvement is a part of food production.

*(Continued on page 17)*

**Nitrogen  
makes  
good eating!**



IT TAKES NITROGEN to turn a steer into steak. It puts weight on beef by increasing both the amount of forage and its protein value. It helps build grazing land that for feeding value can't be beat by any other crop. Whatever the pasture harvest—milk, ham, lamb, or beef—nitrogen makes good eating. And at the same time builds vigorous cover that

helps keep the earth in good shape.

Of all the sources of nitrogen, anhydrous ammonia is the most concentrated and the most economical. It is this preferred form that CSC produces at its Sterlington plant in Louisiana. Most of CSC's production is used to increase the value of productive crops from Gulf Coast soils.

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## Grass Against Communism

by Charles F. Brannan

*Secretary, Department of Agriculture*



Charles F. Brannan

Grasslands possess a great potential among our croplands for increasing the production of food and fiber.

This is the basic reason for the National Grasslands Program in which the Department of Agriculture and the land-grant colleges have joined together to aid farmers in the many tasks essential to unlocking the potential and putting it to work producing food and fiber for the Nation. The program is, in fact, a timely answer to the urgent necessity to employ every acre so that it contributes its full share in supplying the continuously expanding requirements of the present and the future.

The Nation's permanent pastures and ranges run to a billion acres which, for the most part, provide food and fiber for our use only when livestock harvest the forage. On literally hundreds of millions of these acres, production could be increased two or three times by employing improved practices and existing research results. Grass and legumes offer an even greater potential when they are utilized properly in crop rotations. Here they do double duty—feeding livestock, and building the capacity for larger crops of cotton, corn, and other products. With sod crops in the rotations, yields can be stepped up as much as four to six times. Indeed, all-out production cannot

be maintained for long if grass and legumes are left out of the rotations.

These potentials are the targets of the ten-point grasslands program which embraces the scientific practices for establishing grasslands and managing them for high-level production. Among these practices are the use of lime, fertilizers, and farm manures; conservation of water for livestock and forage production; control of weeds, brush, insect pests, and livestock parasites and diseases, and the efficient use of grass and legume seeds of improved and adapted varieties. Through these and similar means, grasslands improvements will yield benefits for everyone. More food and better diets, balanced plans for economical farm operations, conservation of soil and water resources—these are some of the rewards to be reaped from a drive for better grasslands for America. New and larger reserves of fertility will arm us with food and fiber insurance for the future.

The urgency of high-level production has been pressed home forcefully by the deadly challenge of Communism in both the Eastern and the Western worlds. But the need also exists here at home in the important fact that our population has been growing rapidly in recent years. The rate of increase is presently running at two million persons a year, and, unfortunately, no letup is foreseen. This is the combination of necessities which has laid upon us the responsibility for employing grasslands in producing a balanced abundance at progressively higher levels.

## Grass Is Good Business

by Walter B. Garver

*Manager, Agricultural Department, Chamber of Commerce*



W. B. Garver

The National Grasslands Program calls for stepped-up activity to develop agriculture's major new frontier. The program has a goal of raising the productivity of the nation's pasture and forage lands. Use of better grass and legume seeds, improvement of the soil by liming, fertilizer, and other soil

treatments, the control of insect and disease enemies, and better all-round management of these grasslands will give us a greater farm capacity to meet our food needs.

The business part of our economy has three important reasons for supporting the grasslands program:

First, no nation has ever achieved its full stature without a stable and ample food supply. The nation's future, involving as it does a continued growth of population and an expansion of economy, will be brighter with the added capacity for production which the success of this program can assure.

Second, a large part of American business is directly at work in the processing, marketing, and distribution of farm products. Expansion of farm output means growth for these businesses.

Third, another important segment of business makes, supplies, or services, the materials and equipment farmers will need to carry out this program. These businesses, therefore, have what might be called a "selfish" interest in the promotion of the grasslands program because it means good business for them in supplying these needs.

The drive is not without some dangers. While there may be no such thing as progressing too fast, we need to watch that enthusiastic participation does not get too far ahead of our capacity to supply materials and equipment in these times of probable shortages. If this happens we may suffer a severe setback.

The most important task of the grasslands program is to make progress on the basis that this kind of modern farming pays the farmer in dollars and cents as a sound business arrangement. (See page 19)

# INDEPENDENCE DEPENDABLE

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## Help from Fertilizers

by Russell Coleman

*President, National Fertilizer Association*



**Russell Coleman**

The National Grasslands Program, an enlargement of the Pasture Year celebration promoted by the National Fertilizer Association last year, has particular appeal to NFA and other fertilizer industry members. From our experience we know that the program should be crowned with success. When Governor Carvel of Delaware urged other governors to follow his example in proclaiming 1950 as Pasture Year in their states, the response was enthusiastic. The Pasture Subcommittee of our Plant Food Research Committee has found similar response wherever they have conducted pasture tours.

Viewed solely from the standpoint of self-interest, grasslands development offers unusual opportunities

to fertilizer manufacturers. The 85,709,000 acres of plowable pasture in the United States constitute roughly 20 per cent of the farm land devoted to agriculture, but only 5.3 per cent of these pasture acres are fertilized. Even more startling is the fact that only 4.1 per cent of our farms on which pasture is grown, use fertilizer at all.

Through every medium available, farmers should be told about the advantages to be obtained from pasture. How many recognize, for instance, that \$1.00 invested in fertilizer brings from \$7.00 to \$8.00 in beef or milk?

I am confident that the fertilizer industry will play a leading part in promoting the National Grasslands Program. As spokesman for a large segment of its members, The National Fertilizer Association will lend every assistance possible.

## Grasses Need Plant Food

by Paul T. Truitt

*President, American Plant Food Council*



**Paul T. Truitt**

The American Plant Food Council, and its individual members are actively promoting, and will continue to give whole-hearted support to a national grassland program.

The stage has been set for a national program and already many states have initiated state-wide grassland programs. These programs have been enthusiastically endorsed not only by farmers but by bankers, merchants, and other groups interested in a better agriculture. In fact, a new appreciation of the benefits to be derived from a grassland system of farming is sweeping the country.

The fertilizer industry can contribute to the national grassland program in many ways. Adequate fertilization of the pasture, forage, and sod crops is essential for the successful operation of the program in most areas. The fertilizer industry looks forward to supplying the necessary plant food in kinds and amounts as needed. Industry personnel can assist in organizing and putting a grassland program into operation either at a national, state, or community level. The fertilizer industry through its publications is giving prominent attention to the benefits of grassland farming. Research must be continued and the facts disseminated through all media—radio, newspapers, postals, letters, and friendly chats at the crossroads. In these fields the fertilizer industry is hard at work.

## Pest-Control for Grasslands

by C. D. Leiter

*President, National Sprayers and Dusters Association*



**C. D. Leiter**

In setting up the ten basic tasks essential to the success of the National Grasslands Program, the Steering Committee listed point number 6 as follows: "Control weeds, brush, insects, pests, and livestock parasites, and diseases." This statement briefly outlines the principal sphere of sprayers and dusters in the overall grasslands program. New multiple-use farm sprayers and dusters have been developed in the past few years which enable the farmer to effectively and economically combat these many pests which have retarded the trend to grassland farming.

Beginning with seed production, application of new

insecticides by sprayers and dusters to control seed crop insects offers practical means of materially expanding seed production on present acreages. Chemical control of pasture weeds which have sapped the soil of needed plant food and moisture plays an important part along with fertilization and timely mowing in rejuvenating "tired" pastures.

Sprayers and dusters likewise play a "leading role" in reclaiming pastures overgrown with brush through economical application of the new highly effective herbicides.

Finally in controlling the insects which pester livestock as they feed on the grasses, the sprayers and dusters materially contribute to more economical production of meat and livestock products and toward better living for farmers.

## Delaney Hearings Debate:

# Do We Need Pest-Control Chemicals?

## Part 1

Louis Bromfield, well-known writer and operator of Malabar Farms, says for the most part, "No!" Next month testimony by other witnesses will pinpoint the positive side of the question

ON MAY 11, Louis Bromfield appeared before the House Select Committee to Investigate the Use of Chemicals in Food Products. The Pulitzer prize winner, now owner-operator of Malabar Farm in Ohio, testified on the use of chemical pesticides and fertilizers and of their relationship to human health.

Following the reading of his prepared statement, the committee, headed by James J. Delaney, questioned Bromfield on his remarks. His initial statement and the more pertinent questions and answers brought out in the cross examination period are published here as a matter of great interest to farm chemical manufacturers and formulators.

### Prepared statement of Louis Bromfield

May 11, 1951

Gentlemen, let me say that in dealing with this subject we are working in a field in which little authentic information is available and one in which more profound research is imperative. There are countless proponents of and opponents to the use of chemical and even vegetable compounds of a character toxic to animals and humans. Frequently enough, exaggerated and ill-founded statements are made on both sides . . . statements which cannot be wholly supported by evidence.

Owing to the rapid development in agricultural technology, we have been inclined to plunge into many short-cuts and to use, in a wholesome fashion, countless preparations which appear to be effective in the immediate purpose of destroying insects, wiping out diseases, and processing foods but have neglected to investigate the long-range effects upon soils, upon health, and even reproduction.

### ***Food and Drug Act Cited***

The Food and Drug Act was set up to deal with outright and apparent practices having obvious deleterious effects upon the citizens of the country, but little has been done to cope with what might be called the indirect effects of the countless chemical and

Members of the committee include Delaney; T. G. Abernathy; E. H. Hedrick; P. C. Jones; A. L. Miller, M.D.; G. L. McDonough, industrial chemist; Walt Horan, grower and packer; and V. Q. Kleinfeld, chief counsel.

Bromfield has received wide publicity for his agricultural writings and for experiments carried out on his Ohio farm. In his testimony he says that proper care of the soil will eliminate the need for pesticide materials. He also states that it is his belief, many of our more common ailments may be caused by the cumulative effect of such poisons.

organic poisons which are used in vast quantities in the form of pesticides, disinfectants, etc.

It is apparent from statistics that the use of poisons to control plant diseases and the attacks of insects upon both plants and animals has increased steadily during the past twenty-five years. It is safe to say, I think, that there is scarcely an article of food which has not at some time been treated with a poisonous material.

### ***Residue Accumulation***

Many articles of food are submitted not only to numerous applications of a single poison, but frequently to several different kinds of poisons. Some, such as the arsenics, are well recognized as poisons and their effects in considerable quantities, and even the cumulative effects, are recognized.

Concerning the long-range effects of vegetable poisons as rotenone or pyrethrum and compounds such as DDT and chlordane, very little is known although many research authorities regard their effects, especially cumulative, with alarm. It is notable that a report of the Washington State College recorded that the soils in one apple orchard, examined in a survey, contained as much as two tons to the acre of

arsenic sulfate, an amount so great that it was poisonous even to the apple trees.

The use of arsenic and vegetable poisons in the spraying of vegetables for human consumption is so widespread it needs no comment. While in no case does there remain on the fruits and vegetables enough poison to cause immediate death, it is unquestionably true that great total quantities are consumed in minute doses during a lifetime.

### ***Sees DDT As Cancer "Cause"***

It is by no means improbable that this slow and cumulative consumption is partly responsible for the steadily increasing record of heart disease and other organic failures at middle age. It may even have some bearing upon the increase in the incidence of such dread diseases as cancer and leukemia.

The danger lies not alone in the field of horticulture but in the field of animal husbandry, where noxious and poisonous sprays are in widespread use to destroy insects or prevent their attack. DDT, chlordane, and many other materials are being used wholesale with an almost hysterical fervor, often with the recommendation of governmental and state agricultural school authorities.

They are not used alone for the spraying of animals but for the wholesale spraying of the premises of dairies, barns, and even kitchens, both in food processing plants and in homes. These preparations and sprays belong to a category of chemical compounds which are comparatively new and their effects upon both animals and people are almost wholly unexplored. Certainly their use should raise grave doubts.

Put in the simplest terms, what is poisonous to the organic structure of an insect must also be poisonous in sufficient immediate quantities or in sufficient accumulated quantities to other life as well. My point is, that we as a nation, have plunged into the wholesale use of all of these poisons with little or no research concerning ultimate effects upon health, vitality, and the powers of reproduction.

### ***Attributes Virus X to DDT***

The case of DDT is a prime example. At the Texas Research Foundation, Renner, Texas, considerable research has been done with regard to the ultimate effect of this insecticide upon both animals and people. A survey and examination of the milk supply in a nearby city has revealed astonishing amounts of this poisonous chemical in the milk supply, owing to the fact that DDT has been used in great quantities not only in the spraying of animals but of dairy and processing premises as well.

Indications are that DDT acts as a slow cumulative poison, that the system does not eliminate it. It is stored up in the fatty tissue and when some sickness or loss of weight occurs, the DDT finds its way into the liver and kidneys with a highly destructive effect.

Cases have been established in the Southwest where the excessive use of DDT has actually brought about the decline and final death of range cattle. It is not impossible that the influenza or intestinal flu known popularly as virus X is a manifestation of DDT

in the system. No germ or virus has ever been discovered in the case of this disease. It is regarded as a new form of illness and it appeared simultaneously with the widespread use of DDT and similar compounds as insecticides.

It is not impossible that some cases of sickness and partial paralysis diagnosed as poliomyelitis or infantile paralysis are not the true disease at all but merely manifestations of poisons used commonly in and around dairies. Remember that this is the greatest milk consuming nation in the world and that the drinking of milk in great quantities by children is virtually a fetish.

### ***Ties Polio Epidemics to DDT***

Polio is most prevalent in the Southern and Southwestern states where insect attack, both in degree and variety, is greatest and in which the use of every sort of poison for their control is common. It is always at a peak in the summer months when poisonous insecticides are used in a wholesale fashion.

The writer happens to be among a small, but increasing, group which has for some years been interested in the growing and production of food products whether vegetable or animal under conditions which lessen or make unnecessary the use of any poisons as a control either of disease or insects. Missouri University, under Dr. William Albrecht, and others, has made some notable progress. Johns Hopkins University has recently received endowment funds to co-relate the information bearing on this subject. Cornell University has recently established a special college of nutrition to investigate and teach methods which may eventually eliminate the need for the use of wholesale dusts and sprays.

### ***Cites Own Wide Experience***

The writer has spent many years working at first hand in this field in relation to plants, animals, and people and has achieved some notable success in the elimination of the use of all dusts and sprays as insecticides and pesticides for certain classes of vegetables and in the handling of milk. Such universal pests as mosaic blight of celery have been completely eliminated even in soils where infected celery has been deliberately plowed into the soils over a period of years.

Missouri University has found that sufficient amounts of the element nitrogen will control the attack of chinch bugs on corn. They found that corn not suffering from nitrogen starvation was simply not attacked by the pests. The same rule has proven true in Kansas in relation to the attack of greenbug on wheat. In our own experience, an additional amount of nitrogen fertilizer watered into the soil served to drive off insects already present on the vines of squash, pumpkin, and melons.

The former president of the Oregon Fruit Growers Association, through proper soil and cultural methods, arrived at a point where sprays and dusts became no longer necessary in his pear orchard operations.

Many commercial fruit growers, through the proper use of legumes, mulches, and commercial fertilizers

in their orchards, have been able to cut the number of sprays necessary to produce clean fruit from as high as fourteen down to two or three. Mr. Cosmos Blubaugh, a master farmer and orchardist in my own state of Ohio and an internationally known farmer, actually raises alfalfa, not to feed cattle, but to feed his orchard trees by way of mulches. The results are striking.

### ***Home Gardeners' Know-How***

Mr. Walter Pretzerm, president of the National Vegetable Growers' Association, operated his greenhouse and truck gardening operations without sprays or dusts. Countless home gardeners have achieved similar results through obtaining the proper balances among mineral and organic materials. The average farm garden in the older parts of the country where soils have been manured heavily and constantly over long periods of years find no need or use for poisonous sprays and dusts.

The points I am leading up to are two:

1. That the increasing attack by insects and disease upon our agriculture has arisen largely through poor and greedy methods. In other words, a sick soil produces sick and weakened plants which are immediately subject to disease and insect attack.

2. That, in properly managed soils, the necessity for using poisonous preparations injurious to animals and people is greatly diminished and in many cases disappears altogether.

### ***Turned Down Baby-Food Offer***

During 1950 we were approached at our farm by two great food processing and distributing agencies with propositions to produce a variety of vegetables in quantity, chiefly for use in baby foods, which could be guaranteed as free from any dust or spray. They wished to extend the same pattern to all their food products. Obviously we could not accept so gigantic a proposition.

Campbell's Soups put out for their tomato growers a series of fine and scientific pamphlets with the express purpose of increasing quantity and quality of production as well as doing away with the necessity of sprays. I myself farmed and gardened for seventeen years in France on land that had been in use for 1,200 years, without ever using a dust or spray. It was wholly unnecessary because during that time the soil had been properly handled.

In our dairy, the milk storage room is air conditioned by a simple and inexpensive process to a temperature which flies will not tolerate. Dusts and sprays are never used in the milk handling area nor on the cows themselves but only in the adjoining building and stalls where no dust or spray can by any chance come into contact with the milk itself.

We need a thorough investigation not only of effects but of the reasons why these poisons are necessary, and a vast amount of research as to their eventual effects upon all of us. I have merely touched a few high spots of the situation.

If there are any specific questions or a desire for more information I shall be glad to answer within

the limits of my own knowledge, experience, and information. Thank you, gentlemen.

After reading his statements, Bromfield was questioned by members of the committee. Chief Counsel Kleinfeld began, after first establishing the fact that Bromfield claimed to have had success in eliminating pesticides from the growing of some vegetables and in the handling of milk.

### **Cross-Examination by Committee**

**Mr. Kleinfeld:** Now, do you use any insecticides or pesticides at all?

**Mr. Bromfield:** We operate a plot system, and when we find anything of great interest in these, we translate it into the big field operations.

... We are working individually on these (alfalfa and potatoes) plants. When we hit what appears to be the proper balance of minerals and elements for that plant, then that plant flourishes, and it shows an immediate resistance to all disease, and in most cases to insect attacks.

I won't go so far as to say that you can do that with the grasshopper, which will eat fence posts, if they cannot get anything else. It is true with our experience and also with that of Missouri University has been that you can do away with certain types of beetles when you have balanced crops. It is very noticeable when we plant beans in a plot where the soil is not suited to them. They immediately become covered with beetles.

Last year we got rid of potato bugs, which are pests proportionate to the grasshopper. They may come back, I will not say that that is absolute.

Now, having to do with disease, we are absolutely sure that we can eliminate blights by proper soil and moisture conditions. The Missouri University will agree with us to that extent.

**Mr. Kleinfeld:** What are the major crops you grow on Malabar Farm in Ohio?

**Mr. Bromfield:** Our basis is livestock... We have an accredited herd that is tested twice a year and this year it was among the five top in the state of Ohio and we took no special precautions. There were no vaccinations involved.

The basis of operation is the production of high quality alfalfa and clover, and also oats, barley, and wheat.

**Mr. Kleinfeld:** Do you use any insecticides from time to time on any of these crops?

**Mr. Bromfield:** We use none whatever on any of these crops.

(Kleinfeld then questioned Bromfield about his Texas farm, its crop program, and spraying, if any. Bromfield replied that no sprays were used on his Texas farm either. After asking about Bromfield's experiences as a farmer in France, Kleinfeld continued:)

**Mr. Kleinfeld:** You never used a spray there, either?

**Mr. Bromfield:** No. That was what aroused my interest more than anything else in farming and gardening in Europe. I found that sprays and dusts

were necessary sometimes, but very rarely. When I came back here, I opened an agricultural magazine and found fifty per cent of the advertisements related to pesticides.

(Here Kleinfeld questioned Bromfield about the food producers who approached Bromfield about raising spray and dust free foods.)

**Mr. Bromfield:** One of them was the Heinz people and the other was the A. & P. A. & P. was interested in being able to slap on a label stating, 'This product has never been touched by dust or spray' . . . Of course, all these companies realize that the minute they can do that, particularly with baby food, they will have a great advantage over their competitor.

**Mr. Kleinfeld:** You say in your statement that in time many of these compounds, I think you mentioned DDT, appear to lose their effectiveness, apparently because the insects develop an immunity to them. Have you come into personal contact with situations of that kind?

**Mr. Bromfield:** Yes. In the case of DDT and secondarily of chlordane, in relation to the ordinary house fly or barn fly, that is something every farmer knows. The first two years its action is miraculous and all flies disappear. In the third year you have more, and by the fourth year they can drink the DDT and it will have no effect on them.

[Kleinfeld then read a statement taken from an article by A. D. Pickett of the Dominion Entomological Laboratory, Annapolis Royal, Nova Scotia. It said that their experience supported the theory that insecticides, when first applied, drastically reduced the pest, a new balance between the insect and its environment (which now includes the insecticide) is reached. Furthermore, the article stated, when a chemical is used for a specific purpose, it may increase the survival potential of pests which were unimportant before the spray was applied.]

**Mr. Kleinfeld:** Now, do you have any opinion on that point?

**Mr. Bromfield:** I think that that on the whole is a pretty sound statement . . .

**Mr. Kleinfeld:** There appears to be at least one school of thought in the entomological field which indicates some fear that an overuse of insecticides may upset the natural balance of nature.

**Mr. Bromfield:** I don't think there is any question of that. The wholesale spraying of fields . . . let's take the case of alfalfa for one . . . more and more alfalfa is being sprayed with DDT. That wholesale spraying is aimed at what is commonly called the spittle bug, and its successor, in flying form, the leaf hopper. (*Adult spittle bugs and leaf hoppers are two different insects. Ed.*)

But in spraying these in a wholesale fashion you get rid of every kind of insect, even to the bees themselves. Now there are a great many insects you must remember which are extremely beneficial, the bee is one and another is the lady bug.

. . . We have had some conducted experiments with the bird population and there has been plenty of

evidence of birds and fish being killed in almost wholesale fashion by consuming insects which have been sprayed with DDT.

(Bromfield then pointed out how alfalfa was grown on worn out soil at Malabar Farm and also said that the crop was cut while very young when the spittle bug and leaf hopper were in the larval stage. In this way the hatching of millions of eggs was prevented. He pointed out that only commercial fertilizer and barnyard manure was used to produce virtually insect free plants, on formerly worn out soil.)

**Mr. Kleinfeld** (reading from an article by Dr. V. B. Wigglesworth, Head, Unit of Insect Physiology, Agricultural Research Council, Cambridge, England): 'The best hope lies in compromise. There is great scope for discovering just what the insecticides are doing . . . When we have this knowledge perhaps we shall find it is wise to relax some of the chemical pressure and replace some of the more potent chemicals by others with milder action. In this way, we may be able, cautiously, to encourage beneficial insects to multiply.

Do you have any thoughts on that conclusion?

**Mr. Bromfield:** I would agree with that very thoroughly. I do not know where the answer lies. I think that we are overdoing the poison thing in a big way all over. It may be that we can use milder poisons in lesser quantities.

(After citing examples of the natural enemies of some insect pests) . . . Those are natural controls which will produce no harm to man or animal and that is possibly the answer. Possibly they need to be reinforced by some dusts and sprays in extreme cases.

**Dr. Miller:** A year or so ago in Nebraska we had an experiment in which we lost quite a few cattle with what was called virus X. I see you suggest that may be due to excess DDT.

**Mr. Bromfield:** I was referring to the virus X that humans have, that so-called new kind of intestinal flu . . . Well now, they found no bacteria or virus at all and it rose exactly simultaneously with the widespread use of DDT throughout the country. There have been by no means enough research on the subject, but it is by no means impossible.

**Dr. Miller:** Yes, it is something that should be looked into. Of course, the users of sprays in livestock claim they save probably some 68 million dollars by the judicious use of sprays on cattle.

**Mr. Bromfield:** I was thinking more about dairy cattle in what I had to say, where DDT comes in contact with milk consumed by humans . . . in some areas this is dangerously high.

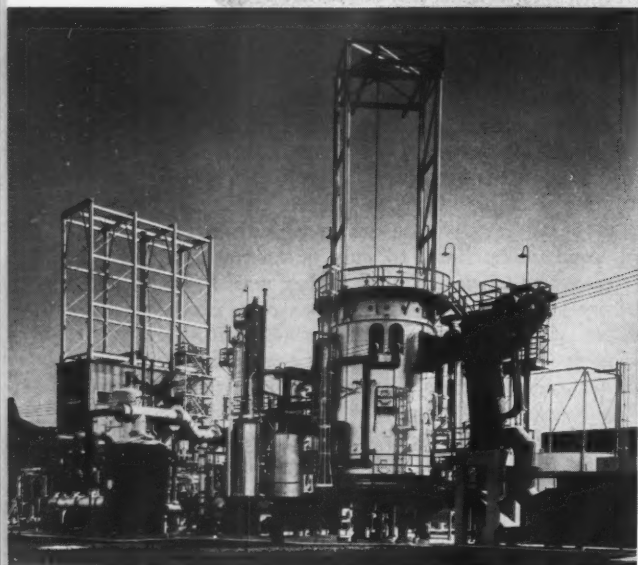
**Dr. Miller:** Don't you think it is necessary—with our present understanding of raising fruits and vegetables and the use of sprays—for the commercial grower to use sprays of different kinds in order to produce enough to satisfy the customer?

**Mr. Bromfield:** At the present state of affairs, if they are going to become commercially successful, that becomes practically necessary.

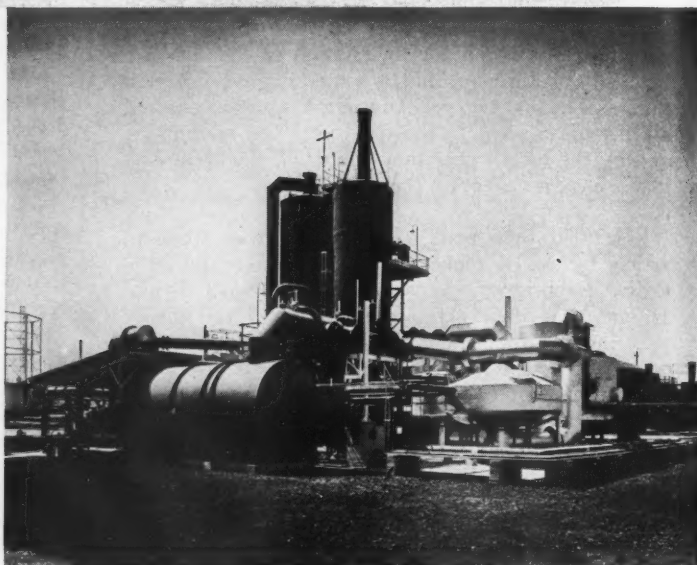
(Walter Horan, grower and packer from the state of Washington thanked Mr. Bromfield for his testimony, but said there were a few points he would like

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to clarify. After referring to his own experience as an orchardist in the Pacific Northwest, Horan prefaced his questions with the following statement:)

**Mr. Horan:** There is not a farmer in America who would not get completely away from the chemical industry and be happy about it if he could, but believe me, until that time comes he is kind of glad that a few (manufacturers of farm chemicals) are in that business.

**Mr. Bromfield:** That is right.

**Mr. Horan:** Well, that is a dangerous thing, because until we are sure—you didn't even bite on that one, you admit that . . .

**Mr. Bromfield:** That is right.

**Mr. Horan:** So until we can be sure of that, we had better not raise the point.

**Mr. Bromfield:** That is right.

**Mr. Horan:** We had better make sure that we bring it to the proper agency and assure the public that the food they consume is all right.

**Mr. Bromfield:** That is right.

**Mr. Horan:** Did you ever read the book entitled, "One Hundred Million Guinea Pigs?"

**Mr. Bromfield:** No, I never did.

**Mr. Horan:** Well, it was a half-baked, sensational volume, and it did immeasurable damage to everyone, particularly anyone trying to produce crops for the market, because it scared people where they are weakest, in their stomachs. This committee wants to set at rest the consumers of America regarding the good people on our farms and you are one of them.

**Mr. Bromfield:** That is right. That is exactly the point I was making when I said a lot of food companies are anxious to get a label on their products of the sort I mentioned . . . My whole interest in this business was a system which seemed to be necessary in certain fields not regularly up to date. The thing I am interested in scientifically and as a farmer is the gradual elimination of the necessity of these things—up to a point. I do not maintain at all that you will have a condition where some sprays and dusts are not necessary. I think what we are after is better agricultural and horticultural practices.

**Mr. Horan:** You won't find a man who knows the subject in America who would not agree with that statement 100 per cent. Thank you. I enjoyed listening to you.

(Next issue: Part II, Delaney Debate)

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# 1951 Conventions

## Brannan, Other Leaders

### Address Plant Food Council In 3-Day Meet at Hot Springs

**T**HE SIXTH Annual Convention of the American Plant Food Council at Hot Springs, Va., heard Secretary of Agriculture Charles F. Brannan announce June 16, that the government plans to step up annual production of nitrogen fertilizer by 500,000 tons to meet agricultural defense needs. The planned increase in production, said the Secretary, can come partly from re-opening two Army-owned nitrogen plants.

Brannan said USDA officials "are working to assist private industry to increase nitrogen fertilizer production," adding that "it is conceivable that in an extreme emergency, additional plant capacity could be built by the Government as in World War II. It goes without saying, however, that the Government prefers that private industry carry the ball." Brannan pledged USDA support to private industry in getting the job done.

Over 536 members of the fertilizer industry who attended the Plant Food Council's convention this year, heard Brannan declare that "the application of increased quantities of fertilizer is the farming practice which provides one of the biggest opportunities for quickly increasing all agricultural productions in behalf of the defense effort." He had previously stated that American agriculture cannot look to new land and expanded acreages to satisfy the nation's immediate growing needs for food and fiber.

Speaking June 15 on "Agriculture—Our First Line of Defense," Senator Allen J. Ellender (D-La.), chairman of the Senate Agriculture Committee, charged that pressure groups have concentrated on the farmer and have tried to attribute to him all the guilt for present-day high prices. He further said that "there is no earthly reason why the farmer should not be afforded some protection in our economy and certainly he is entitled to a

living wage, but he is powerless to deal effectively in the marketplace with the highly organized interests opposing him."

In closing, the Senator said "our soil must be maintained at all cost," and asserted that "fertilizer is one of the tools that will enable us to do the job of keeping our fields fertile and our farms productive."

Paul T. Truitt, president of the Council, told the conventioners that "the best way to kill off foreign ideologies is to do it with a 'full dinner pail' and an abundance of good living." He said fertilizer is a key factor in a plentiful food supply.

Viewing the outlook for fertilizers, Truitt reported "there is considerable well-informed opinion in the USDA that the demand for and the use of plant foods will double in the 1950-60 decade." He said that already "expansion is taking place in the nitrogen and potash fields, but that the present shortage of sulfur and sulfuric acid,

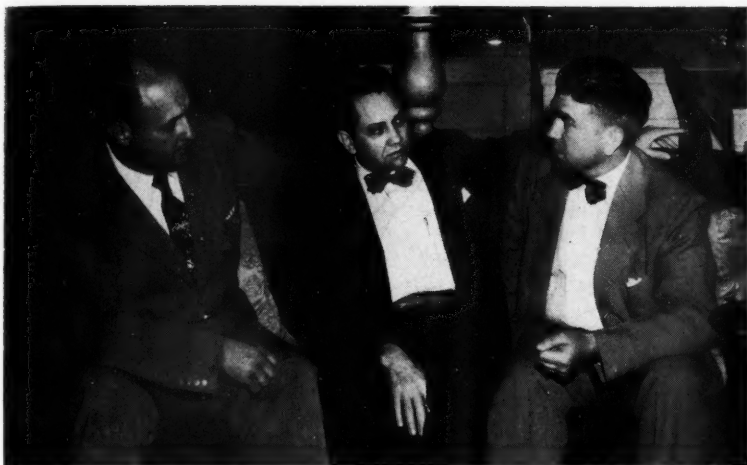
Speakers who addressed the APFC general meeting on June 16 were: standing, l. to r., R. A. Wall, Edwin Bay, Dr. R. F. Poole, Phil Alampi; seated, Paul Truitt, Charles F. Brannan, Paul Sanders, and Ferdie Deering



Talking over affairs of the fertilizer industry are Howard Fisher (left), Michigan Fertilizer Co., and Ed Ryland (ret.), Virginia-Carolina Chemical Corp. Both men have long been prominent at APFC meetings



American Plant Food Council Photo



*American Plant Food Council Photo*

Here, shown talking shop between official Plant Food Council meetings, are (left to right): Frank Crumpler, Chilean Nitrate Sales Corporation; with G. T. Newman and P. T. Smith, both of Smith-Douglass Co., Inc.

so vital to the production of phosphate fertilizers, is vexing agriculture, Government and the industry alike."

Dr. H. E. Myers, Head of the Department of Agronomy, Kansas State College, said that if human dietary level is to be improved, "livestock products must be increased." Speaking on the subject, "Fertilizer Use in Relation to Animal Nutrition," Myers said that fertilizers play a big part in quantity feed production—a requisite if the goal (of improved human nutrition) is to be reached.

"By fertilization and lime," said Dr. Meyers, "any soil may be adapted to the production of legumes. Thus it becomes a question as to whether we adapt the soil to the crop or the crop to the soil. There is only one best answer and that is to adapt the soil to the crop. This means fertilization."

Dr. Paul D. Sanders, editor of the "Southern Planter" and well-known agricultural leader, told the American Plant Food Council members that "commercial plant food has become so important to American agriculture, so essential to the Nation's nutrition, that its availability in constantly increasing quantities will determine the course of our mobilization effort."

Sanders acted as moderator of a forum on agriculture featuring discussions by top officials of the American Agricultural Editors' Association, the Association of Land-Grant Colleges and Universities, National Association of Radio

Farm Directors, National Association of County Agricultural Agents, and the National Vocational Agricultural Teachers' Association.

Ferdie J. Deering, editor of "The Farmer-Stockman" and president of the American Agricultural Editors' Association, in citing the importance of visual aids and "similar materials" to help farmers do a better job of farming, said, "Farmers must have some idea of how to interpret the recommendations of their soil laboratories, must understand how legumes and fertilizers fit together in a soil-building program, and they must understand what they are buying and why. They should know some of the signs of plant food deficiencies just by looking at a crop."

Dr. R. Frank Poole, president of the Association of Land-Grant Colleges and Universities, and president of Clemson Agricultural College, said that "the time has not yet come when the consumer public must fear inability of the farmers to produce ample food for the nation and much of the world."

Edwin Bay, Springfield, Ill., president of the National Association, County Agricultural Agents, said at the forum on agriculture that "it would take an additional 50,000,000 acres of productive land to maintain present agricultural production without the use of fertilizers and we know these acres are not available."

The chief of the nation's county agents said he was "confident that the fertilizer industry will produce



As Paul T. Truitt checks his watch just before meeting time, Charles F. Brannan chats with conventionier



Sen. Allen J. Ellender (left) and Dr. H. E. Meyers with APFC hosts Paul T. Truitt, Dr. J. R. Taylor and W. T. Wright, executive committee chairman



*APFC Photo*

"Everybody smiles!" in this shot of Mrs. Louis Wilson with (from left) J. A. Monroe, Smith-Douglass; Paul Sanders; and A. J. Dickinson of V-C

all of the plant food supplies possible under the limitations of manpower, plant facilities and basic materials as they may exist during the coming months and years."

Speaking as the representative of the National Vocational Agricultural Teachers' Association of which he is vice-president, Robert A. Wall, Luray, Va., said that "when our Government tells us that an increase of four to five per cent in corn production is necessary to supply our Nation's demands, it is not necessary to prepare that much additional corn ground because this increase in yield can easily be brought about by increasing the amount of fertilizer of the proper analysis."

The Vo-Ag official reported that "in making out a teaching calendar which all Vocational Agricul-

tural teachers are required to do," he was confident that "more time is devoted to the job of fertilizing crops than to any other job in the calendar, and rightfully so."

Another panel member, Phil Alampi, president of the National Association of Radio Farm Directors and Farm Program Director of Station WJZ, asserted that "many pamphlets, books and articles on organic gardening are being distributed in which there is a hodgepodge of truths, half-truths, and propaganda."

On Saturday evening, at the annual banquet of the American Plant Food Council, Senator Karl E. Mundt (R-S. D.), called for a bi-partisan "crusading alliance" of all voters in support of the Nation's private enterprise system and to "write a new Declaration of Independence which will free us

forever from the alien creeds of a crumbling world."

Eight new members were elected to the Board of Directors at a business session of the Plant Food Council on June 16. They are: John R. Riley, Jr., Spencer Chemical Company; J. C. Crissey, G. L. F. Soil Building Service; Wallace B. Hicks, Wilson & Toomer; Kenneth D. Morrison, Naco Fertilizer Company; R. R. Hull, I. P. Thomas and Son; J. A. Roberts, Pioneer Phosphate Company; C. B. Clay, Cotton States Fertilizer Company; and M. W. Whipple, Olds & Whipple, Inc. All were elected to terms expiring June 30, 1954.

Paul Prosser, The Baugh & Sons Company, was elected to fill the unexpired term of Walter S. Rupp, retired executive of his company, the term expiring June 30, 1952.

## 1951 Conventions National Experts Speaks

### At 26th NFA Annual Conclave

**M**ORE THAN 600 members of the fertilizer industry heard nationally known experts relate vital world and national problems to agriculture and the fertilizer industry during the National Fertilizer Association's 26th Annual Convention held June 11-13 at White Sulphur Springs, W. Va.

Clinton P. Anderson told the group that the fertilizer industry is in the front line of the present

drive to relieve world tensions and restore and maintain peace. "Fertilizer manufacturers," said the Senator from New Mexico and former Secretary of Agriculture, "can help offset present world food shortages and the resultant unrest by increasing its capacity to supply vital plant foods."

Dr. Edwin G. Nourse, eminent economist, told the convention that "Inflation is fun while it lasts." Stating that everybody is trying

to win at the inflation game at the expense of the other fellow, Dr. Nourse singled out three major groups who play an important part in aggravating the situation. "Farm leaders," said Nourse, "are proposing the abandonment of the effort to control prices by a Federal agency." In a strong economic and political position they think, he maintained, that they could win in the inflation game.

"Organized labor," said Nourse,

Members of the NFA Corn Sub-Committee panel, seated from left to right: Proctor W. Gull, Spencer Chemical Co., chairman; Murry C. McKunkin, Coke Oven Am-

monia Research; Borden S. Chronister, Barrett Division, Allied Chemical & Dye Corp.; and George V. Taylor, Market Research Director, Spencer Chemical

NFA Photo



"is deeply convinced that its real wages should increase in the stationing of a high-production economy." "They seem to feel," Nourse charged, "that inflation may be the price the country would have to pay for getting labor's support to the armament effort."

"Management," continued Nourse, "has theoretical, statistical, and accounting arguments to use against labor's thesis as to the pattern of long-run economic stabilization. But with government demand so pressing and the future supply of civilian goods so much below prospective spending power, it is disposed to stand pat with the hand it holds behind the stack of blue chips it has accumulated."

### Totman Address

In the Annual Convention Address by the Chairman of the Board of Directors, J. E. Totman summarized the highlights of supplies, legislation, and publicity affecting the fertilizer industry during the preceding year. Mr. Totman reported that during the year above-ground stocks of sulfur were reduced by 312,530 tons and said that at present shipping rates, this constituted less than six months' supply.

Noting that a sulfur allocation order just issued prohibits the use by anyone of more sulfur than they used in 1950, Totman said there has been no government allocation of other fertilizer materials. "The impact of the National Production Authority's Controlled Materials Plan on the fertilizer industry," said Totman, "will become more and more pronounced with the passing of time."

### Price Controls

Totman also touched on price controls affecting the fertilizer industry. Confirming a more complete report made on price control elsewhere in this issue, Mr. Totman said, in part, "During the first month of this regulation our Association (NFA) was repeatedly advised by OPS General Counsel that mixed fertilizers sold by manufacturers to consumers through agents were not affected by the order.

"Later," he said, "they rescinded

this decision and advised that the sale of mixed fertilizers to farmers must comply with the provisions of this order (CPR-22).

"It is believed that a ceiling price regulation tailored specifically for fertilizers may be in effect before the 1952 season."

Totman also reported on increases in rail freight rates, noting that such increases make substantial additions to the cost of fertilizer. "The National Fertilizer Association," Totman said, "is vigorously opposing them."

Dr. Russell Coleman, president, NFA, announced a cooperative effort to help the Tennessee Valley Authority and the National Fertilizer Association meet their individual responsibilities by the periodic exchange of advice and individual responsibilities by the periodic exchange of advice and information relating to fertilizer process research, production, distribution, and use.

### Coleman Speaks

In an address to the convention, Dr. Coleman spoke on the subject, "Beyond the Iron Curtain," in which he outlined the part the fertilizer industry has in world peace. "Everyone," said Coleman, "from the man on the street to the man in the White House has a solution to our foreign policy." Disclaimer.

Listening intently (below) as Sen. Clinton P. Anderson speaks, are, (from left) Russell Coleman, Fred Lodge, and J. E. Totman, presiding



Russell Coleman, NFA president, with Dr. Edwin G. Nourse, noted economist, and E. J. Condon, of Sears-Roebuck Co.



Dinner at the Greenbrier (from left) Mr. and Mrs. H. C. Doellinger, W. M. Newman, E. C. Horne, J. K. Daugherty, Mrs. and Mr. R. V. Kerley, Mrs. F. W. Darner, Neil Bass, and Mr. Darner





Hosts at International Minerals and Chemical Co. cocktail party and buffet luncheon in the Spring Room at the Greenbrier were Mr. and Mrs. Louis Ware, of Chicago, Ill.

ing the idea that he has a secret formula for raising the Iron Curtain, Coleman said that he believes the fundamental reason the Iron Curtain exists is food.

Later in his address, Coleman said, "If by some miracle each nation would apply the known scientific improvements in methods of food production, the world's population could be fed and world peace would be possible. This, I believe, is the miracle to which we should look to disintegrate the Iron Curtain."

"This miracle," he continued, "will not occur immediately, but it can occur in time if—and only if—there is a strong fertilizer industry with the leadership to produce enough of the right kind of plant food to do the job."

### Farm Progress

Speaking on the subject, "Farmers on the March," E. J. Condon, Assistant to the President, Sears, Roebuck and Company, reminded the group of the important part its industry has played in agricultural progress during the past 25 years. Condon attributed a large part of the advance in the productivity of our farms to the ability of the fertilizer industry to produce enough of the right kinds of plant foods at the right time. "It is my sincere conviction," said Condon, "that in our ability to continue to enlarge and expand our food and fibre

production to meet our expanding needs, lies our ability to endure."

### Corn Sub-Committee

A special presentation was given by the NFA Corn Subcommittee on the subject, "More Corn for America." Under the chairmanship of Proctor W. Gull, Agronomist, Spencer Chemical Company, the panel consisted of Borden S. Chronister, Chief Agronomist, Southern Division, Barrett Division, Allied Chemical & Dye Corporation; Murry C. McJunkin, Northeastern Agronomist, Coke Oven Ammonia Research Bureau; and George V. Taylor, Director of Market Research, Spencer Chemical Company.

Chronister reported on the success of various "100-bushel Corn Clubs" in several regions of the country. The clubs were organized to demonstrate to farmers how they could, on their own farms, by using recommended practices, increase their corn yields from 30 to 40 bushels per acre, in some cases to more than 100 bushels. The

number of clubs as well as the number of members in each club has increased many times, said Chronister, since they were started in 1944.

McJunkin showed how visual-aids materials could be used to illustrate various efficient and profitable corn-growing practices. The information he presented, McJunkin reported, as well as the preparation of the particular slide series which he showed to the group, was the result of a project undertaken by the Corn Team at Pennsylvania State College, School of Agriculture.

Taylor outlined the potential market for fertilizers in the growing of corn and used statistical charts and graphs to illustrate his points. Taylor demonstrated that "optimum fertilization offers the individual enterpriser at once a chance at maximum profits and a wholesome insulation against price decline." Taylor said he believes that an understanding of fertilizer costs is prerequisite to a full appreciation of optimum fertilizer use. ♦

Among the guests at the H. J. Baker & Co., cocktail party and buffet in the Greenbrier's famous Spring Room were Mrs. J. H. Epting, Russell Coleman, NFA president, Miss Betty Anne Epting, and J. H. Epting, president of the Epting Distributor Company, Leesville, S. C.



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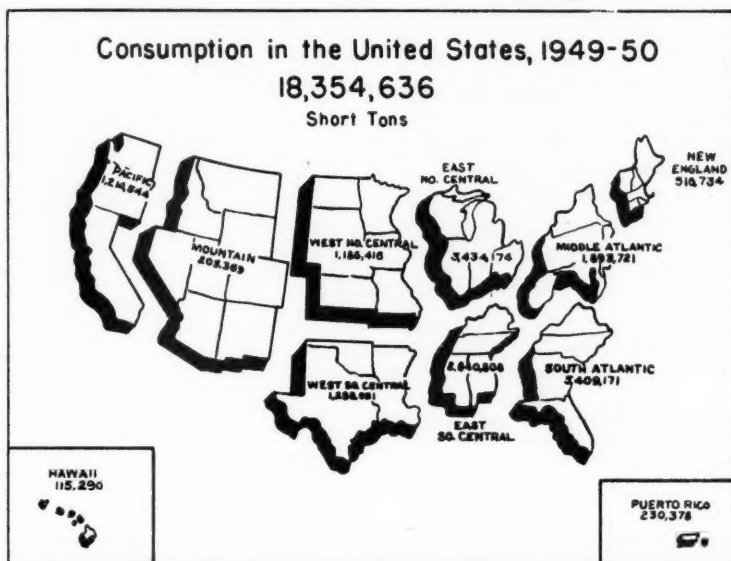
# Industrial News

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## 1950 Fertilizer Consumption



Fertilizer usage by regions as shown in recent report by USDA

A REPORT issued by Walter Scholl and H. M. Wallace of the Bureau of Plant Industry, Soils, and Agricultural Engineering shows that although total shipments of commercial fertilizers from June 30, 1949 to June 30, 1950 dropped about one per cent from the total of the previous year, total plant nutrient content increased almost three per cent. The increase in nutrient content resulted from increased tonnage of separate materials and the use of higher analysis mixtures and materials.

During this period 18,354,636 tons of fertilizers, mixed and separate materials, were shipped for consumption within the United States and its territories. This was a decrease of 187,294 tons from the 18,541,885 tons shipped during the 1948-49 period.

Plant nutrient content went from 3,934,728 tons to 4,061,529 tons. Weighted average nutrient content of commercial mixtures also increased about 3 per cent, from 22.55 per cent to 23.24 per cent.

Total consumption in 28 states

and territories was larger than in the previous period. Most states of the Middle Atlantic, West South Central, Mountain, and Pacific regions showed gains. In the remaining states it decreased 728,326 tons but only New Jersey, South Carolina, Minnesota, and the Dakotas showed shipments less than 90 per cent of their 1948-49 deliveries.

Distribution of shipments according to region was: Atlantic Coast, 43 per cent; Central, 47 per cent; Mountain and Pacific, 8 per cent; and territories, 2 per cent. Shipments during the January-June period amounted to 73.2 per cent, a slight increase over the 70.2 per cent sent out during that period of 1949.

Commercial mixtures amounted to 67 per cent of the total or 12,308,932 tons, 2.2 per cent below the 12,839,506 tons or 69.2 per cent reported for 1948-49. Distribution decreased in all regions with the exception of the West South Central area and the territories.

A total of 927 grades were sold

within the United States, including 468 with sales of less than 100 tons each. In addition to these there was probably a hundred or more not listed by grades.

The best seller in fertilizers turned out to be 3-12-12, which replaced 2-12-6 as favorite. Distribution of this grade amounted to 10.14 per cent of the total tonnage or 1,221,725 tons. Second place was filled by 2-12-6 followed by 5-10-5, 3-12-6, and 3-9-6. Total tonnage of these five top grades was 4,558,862 tons or 37.84 per cent of the fertilizer mixtures total.

Weighted average nutrient content was up in practically all states and ranged from 19.72 per cent in Georgia to 36.25 per cent in North Dakota. The average for the entire country was 4.02 per cent nitrogen, 10.93 per cent available  $P_2O_5$  and 8.29 per cent  $K_2O$ .

More separate materials were used for direct land application and farm mixing than in the previous period. Increases occurred in all but 16 states and the total of 6,045,704 tons was 6 per cent higher than in 1948-49. The greatest increase was noted in the South Central and Mountain regions and the territories.

Sodium nitrate was the largest selling nitrogen material although its distribution decreased in 38 states. Use of ammonium nitrate increased as shipments increased from 347,223 tons to 577,562 tons. Notable increases in distribution of this material were reported in all but seven states. Anhydrous ammonia shipments showed a large gain, rising 18 per cent to 85,516 tons.

Shipments of organic materials increased generally but, except in the Southeastern states, they were less than during the previous period.

Use of normal superphosphate declined in most states of the West North Central and Mountain areas but this was more than offset by the increased (Continued on page 33)

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Dallas, Tex.  
Houston, Tex.  
Norfolk, Va.  
Havana, Cuba  
San Juan, Puerto Rico



## Industrial News . . .

(from page 31) distribution of concentrated material. Shipments of normal superphosphate totalled 1,856,777 tons, an increase of 72,058 tons. Concentrated super usage rose to 265,155 tons, an increase of better than 35 per cent above the 196,290 tons used during the previous period. Consumption of phosphate rock increased very little and tonnages of miscellaneous phosphates decreased in the South Atlantic and West South Central regions but increased in the Middle and East South Central areas.

Distribution of muriate of potash increased to 109,289 tons from the 95,108 tons used during the previous period. Total shipments of potash materials other than muriate declined from 80,504 to 59,610 tons. About one-half the tonnage of manure salts used during 1948-49 was shipped, with greatest distribution in the Atlantic Coast region and the territories.

A total of 4,061,529 tons of plant nutrients were applied during this period, including 1,005,452 tons of nitrogen, 1,951,385 tons of  $P_2O_5$ , and 1,104,692 tons of  $K_2O$ . This was an increase of 9.3 per cent over the 1948-49 shipments of nitrogen.  $P_2O_5$  gained 0.5 per cent and  $K_2O$ , 2.9 per cent.

### Coolidge Replaces Bolton as DuPont Chemical Director

Dr. Cole Coolidge will replace Dr. Elmer K. Bolton as director of the E. I. duPont deNemours & Company Chemical Department on July 1. Bolton retires on June 30 after serving as director of the department for 21 years.

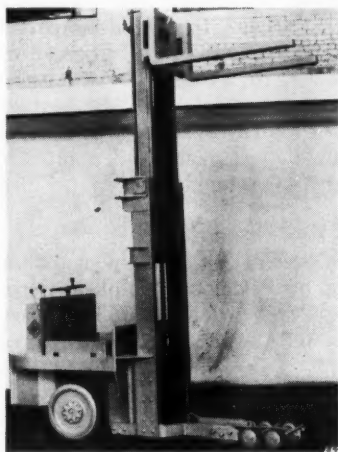
Coolidge joined the department in 1923 as a research chemist, be-

came a group leader, then assistant director of the duPont Experimental Station and in 1949 assistant director of the department. Much of his research work has been in organic chemistry with emphasis on phases of rubber chemistry, synthetic resins, and new coating compositions and plastics.

Bolton became associated with du Pont in 1915 and a year later was placed in charge of a group of chemists to study preparation of synthetic dyes. While director of the Chemical Section of the Dyestuffs Department from 1921 to 1929, he was responsible for research on organic chemicals including seed disinfectants. Under his guidance the search for a practical synthetic rubber resulted in the commercial manufacture of neoprene.

### Elwell-Parker Lift-Truck

A new model electric-power industrial truck developed by Elwell-Parker Electric Company com-



New Elwell-Parker Truck

bines low truck weight with relatively high load capacity.

For high tiering the truck may

be equipped with a fork, the tines of which come below the top level of the wheels. The base tier rests on wood or steel skids that are eight inches high, enabling the forward wheels to clear them. Upper tiers are handled on pallets, runners, or cleats in the usual manner of fork trucks.

Several sizes are being built with load capacities ranging from 4,000 to 10,000 pounds.

### Camp Joins Southwest Potash



Thomas E. Camp, Jr.

Thomas E. Camp, Jr., has joined Southwest Potash Corp. as vice-president in charge of sales. Camp was previously division manager of Armour Fertilizer Works, Atlanta, Ga., and has many years of experience in the fertilizer industry.

The organization is a potash subsidiary of The American Metal Company, Ltd., and is expected to begin production during late 1952.

### Peterson Vibrolator on Market

The Martin Engineering Company has gained exclusive rights to

**AS NEAR AS YOUR PHONE**  
or contact us by  
**TELEGRAPH,  
TELETYPE  
OR LETTER**



*Woodward & Dickerson*  
*Inc.*

**FERTILIZER AND FEED MATERIALS**  
Established 1873

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*are the farm families throughout the nation who buy your products. Many of their production needs are closely related to yours.*

*Their success in meeting this year's greatly increased food and fiber goals depends to a large extent upon your ability to manufacture and distribute essential supplies of fertilizers and pesticides.*

*Farm organization leaders, along with their experienced Washington staffs, are constantly presenting factual data on farm operations to key Congressional and Government officials.*

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*It is apparent that you will both make a greater contribution toward a stronger America with a full breadbasket by . . . working together as partners.*

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*Agricultural Consultants  
Editorial Services*

740 Jackson Place, N. W.  
Washington 6, D. C.

## Industrial News . . .

the manufacture of the Peterson Vibrolator in the United States. This vibrator unit is designed to aid movement of materials such as granular chemicals, flour, grain, and other materials that arch and resist movement toward the outlet of hoppers and bins. It is also used where wet mixtures tend to entrain air.

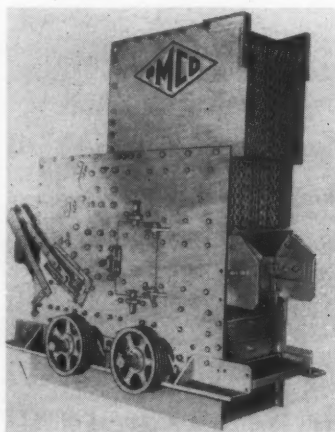
Available in several sizes the unit is virtually noiseless in operation, self-lubricating, and requires little maintenance. It starts instantly without manual assistance. For further information about the Peterson Vibrolator write the AMERICAN FERTILIZER AND ALLIED CHEMICALS.

### Phillips Plans Sulphur Plant

Phillips Chemical Company will soon begin construction of a sulfur extraction plant in west Texas. The plant will be designed to extract nearly a quarter of a million pounds of elemental sulfur per day from natural gas. It will be located in the Permian Basin oil fields, near Goldsmith, Texas. Sulfur output from the new plant will be used by the company in connection with its ammonium fertilizer plant at Adams Terminal, Texas.

### PMCO Impact Master

Construction Equipment Division of Pettibone Mulliken Corp. has developed the PMCO Impact Master. The breaker features



Impact Master

"controlled impact action," an exclusive principle which controls the breaking operation and directs the flow of material through the mach-

ine to produce a uniform gradation cubical aggregate.

The machine is designed for reducing many types of non-abrasive and low silica content materials. Models are available with capacities up to 500 tons per hour.

Complete information may be obtained by writing AMERICAN FERTILIZER AND ALLIED CHEMICALS.

### Super Production Rises

Superphosphate production during the first quarter of the year, totaled 3,053,000 tons, 18 per cent APA basis, an increase of 307,000 tons over the same period of 1950. The National Fertilizer Association reports that consumption during the period was 3,357,000 tons as against 3,210,000 tons during the first three months last year.

The combination of increased production and high disposition further depleted inventories of raw materials. Stocks on hand at the end of the first quarter this year were lower than at any time since June, 1950, totalling only 945,000 tons.

Production of concentrated superphosphate during March was 67,000 tons, 45 per cent APA basis, a ten per cent increase over the 61,000 tons produced during March 1950. (See Table, page 36)

### Fertilizer Tax Tag Sales

Declining sales of fertilizer tax tags indicate a continuing decrease in the availability of fertilizer. Tag sales representing the sale of 1,088,288 tons of fertilizer were sold during April of this year compared to 1,113,968 tons sold during the same month of 1950. The decrease amounts to 2.3 per cent.

Tag sales for the fertilizer year, July 1, 1950, through March 31, 1951, are 8,194,199 tons, an increase of 965,408 tons over the sales recorded during the same period of 1949-50. This is primarily due to the large sale of tax tags during the last half of 1950.

Fertilizer sales in the fourteen reporting states for the first quarter of 1951 are still 257,199 tons over that sold during the same period last year. So far a total of 4,753,966 tons have been reported sold during the three months.

(See Table on page 36)

AMERICAN FERTILIZER & ALLIED CHEMICALS

# KOLKER

BASIC AGRICULTURAL  
CHEMICALS OF  
QUALITY

**DDT**

100% technical  
Wettable Powders  
Dust Concentrates  
Emulsifiable Solutions

**BHC**

Technical grade (36% gamma)  
12% gamma Concentrates

**2,4-D**

Acid  
Sodium Salt  
Butyl Ester  
Isopropyl Ester  
Ester and Amine salt solutions  
Low-volatile Esters

**2,4,5-T**

Isopropyl and Butyl Esters  
Low-volatile Esters

Plants in Newark, N. J.  
and Houston, Texas



**Kolker Chemical Works Inc.**

80 LISTER AVENUE, NEWARK 4, N. J.  
*Manufacturers of Agricultural Chemicals*

# FERTILIZER TAX TAG SALES AND REPORTED SHIPMENTS (In Equivalent Short Tons)

COMPILED BY THE NATIONAL FERTILIZER ASSOCIATION

State	April		January-March		July-March	
	1951	1950	1951	1950	1950-51	1949-50
Virginia . . . . .	..	..	295,628	306,552	454,176	494,980
N. Carolina . . . . .	..	..	932,624	910,697	1,323,909	1,168,268
S. Carolina . . . . .	110,564	101,798	527,975	546,628	836,186	746,772
Georgia . . . . .	164,655	194,697	722,783	690,198	1,002,236	907,411
Florida . . . . .	93,545	73,611	373,934	346,509	901,154	815,138
Alabama . . . . .	220,313	228,694	386,143	348,278	613,157	513,795
Tennessee . . . . .	92,060	104,611	134,091	100,283	253,609	201,326
Arkansas . . . . .	98,599	81,489	135,536	98,191	211,469	165,609
Louisiana . . . . .	47,058	48,327	148,997	117,217	223,224	173,661
Texas . . . . .	59,471	61,331	215,402	201,961	471,511	417,610
Oklahoma . . . . .	..	..	57,484	60,290	113,092	114,808
<i>Total South . . . . .</i>	886,265	894,558	3,930,597	3,726,804	6,403,723	5,719,378
Indiana . . . . .	89,465	74,950	275,205	296,924	771,369	702,343
Kentucky . . . . .	55,038	92,073	231,988	254,304	439,751	420,351
Missouri . . . . .	57,520	52,387	316,176	218,735	579,356	386,719
<i>Total Midwest . . . . .</i>	202,023	219,410	823,369	769,963	1,790,476	1,509,413
<i>Grand Total . . . . .</i>	1,088,288	1,113,968	4,753,966	4,496,767	8,194,199	7,228,791

## JAITE HEAVY DUTY MULTI-WALL PAPER BAGS

OFFER DEPENDABLE PROTECTION FOR  
YOUR FERTILIZER

### THE JAITE COMPANY

"Manufacturers of Paper and Paper Bags"

JAITE, OHIO



## CAL-MAG OXIDES CUT YOUR COSTS WITH

Unexcelled for its superior Dehydrating, Neutralizing, and Curing factors in the preparation of better fertilizers. Write for complete information.

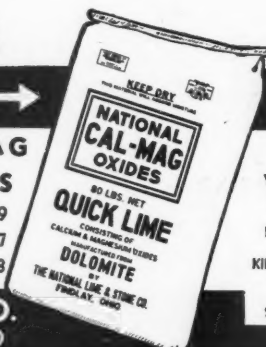
### PROMPT SHIPMENTS

Three railroads serve our Carey, Ohio plant--assuring prompt delivery--everywhere.

*The* **NATIONAL LIME and STONE CO.**  
General Offices . . . . . FINDLAY, OHIO

### CAL-MAG OXIDES

MgO 40.39  
CaO 58.07  
TNP 203.88



We Also Produce  
DOLOMITIC  
HYDRATED  
LIME (165 TNP)  
and  
KILN DRIED RAW  
DOLOMITE  
(107 TNP)  
Screened to size

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a symbol of quality  
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All grades of Commercial Fertilizers  
Superphosphate      Sulphuric Acid  
Insecticides and Fungicides  
Phosphoric Acid and Phosphates  
Phosphorus and Compounds of Phosphorus  
Fluosilicates      Salt Cake  
Gelatin      Bone Products  
Ammonium Carbonate

**The AMERICAN AGRICULTURAL CHEMICAL Co.**

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31 FACTORIES AND SALES OFFICES, SERVING U.S., CANADA AND CUBA—ASSURE DEPENDABLE SERVICE

JUNE, 1951

## Davison Official Heads Safety Campaign

The first meeting of the advisory committee of a newly organized fertilizer section of the National Safety Council was held last month in Baltimore. Plans were made for a fertilizer industry safety campaign and a formal program for nation-wide action will be presented at the October 11, 1951, National Safety Congress in Chicago.

A. B. Pettit, supervisor of industrial health and safety for the Davison Chemical Corp., and chairman of the committee said, "Although there are more than 500 fertilizer plants in the United States, there has never, prior to this, been any organized national effort to reduce the appalling frequency and severity of accident injuries occurring in the industry." Pettit pointed out that industries which have conducted special aggressive programs have been well rewarded by a substantial reduction in the number and seriousness of their accidents and a decided

decrease in the industrial illness experienced by employees.

He pointed out that many other industries have for years cooperated to conduct special sessions for the solution of specific problems at the National Safety Congress.

The fertilizer industry is being urged to send representatives to the October meeting of the congress. Measures for reducing accidents and industrial illness, such as the exchange of health and accident information, the maintaining of proper records, and the analysis of accident causes, will be discussed.

Other members of the fertilizer advisory committee include J. S. Fields, Phillips Chemical Co., vice-chairman; J. E. Smith, Spencer Chemical Co., secretary-treasurer; J. M. Sisson, Tennessee Valley Authority; H. R. Krueger, Phillips Chemical Co.; M. F. Wharton, Arizona Fertilizer Inc.; and R. L. Hugg, International Minerals and Chemicals Corp.

## International M. & C. Plans Innis, Speiden Purchase

Stockholders of the International Minerals and Chemical Corp. will consider a proposal for the acquisition of Innis, Speiden and Co., at a special meeting in New York on June 27.

Louis Ware, president of International said, "Potassium chemicals are important industrial chemicals, manufactured from muriate of potash, which is one of the principal products of International Minerals & Chemical Corp. The business of Innis, Speiden & Co., therefore, forms a natural basis for the further expansion of International in the chemical field and will implement the operations of its potash division."

## Acme Vice-President Dies

Herbert A. Lynch, vice-president and secretary of the Acme Fertilizer Company, Wilmington, N. C., died on May 30 after a short illness. He had been affiliated with the concern since 1931.

### FEEDING AND FERTILIZER MATERIALS

(SINCE 1898)

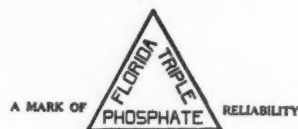
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PHILADELPHIA 7, PA.



### TRIPLE SUPERPHOSPHATE

46 to 48% Available Phosphoric Acid



20% SUPERPHOSPHATE

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U. S. Phosphoric Products

Division  
TENNESSEE CORPORATION  
Tampa, Florida

For  
"high-nitrogen"

fertilizer — use

## Koppers Ammonium Sulphate!

Koppers offers a good commercial grade of ammonium sulphate—the element that is so essential to fertilizer because of its high nitrogen content.



**KOPPERS COMPANY, INC.**  
Tar Products Division  
Pittsburgh 19, Pa.

### Characteristics

Koppers Ammonium Sulphate comes in crystals with low free-acid and moisture content. The nitrogen content is guaranteed to be not less than 20.5%.

### Shipment

From St. Paul, Minn. and Kearny, N. J., Koppers Ammonium Sulphate is shipped in 100 lb. and 200 lb. bags—also in boxcars and trucks. From Granite City, Ill. and Midland, Pa., it is shipped only in boxcars and trucks.

# Ashcraft-Wilkinson Co.

*Fertilizer  
Materials*



*Feeding  
Materials*

## ALL FERTILIZER MATERIALS

FOREIGN AND DOMESTIC

**Agricultural Chemicals   Sulphate of Ammonia**  
**Organic Ammoniates                      Sulphur**

**Exclusive Distributors : DUVAL SULPHUR AND POTASH COMPANY**

### Vegetable Oil Meals and Feedstuffs

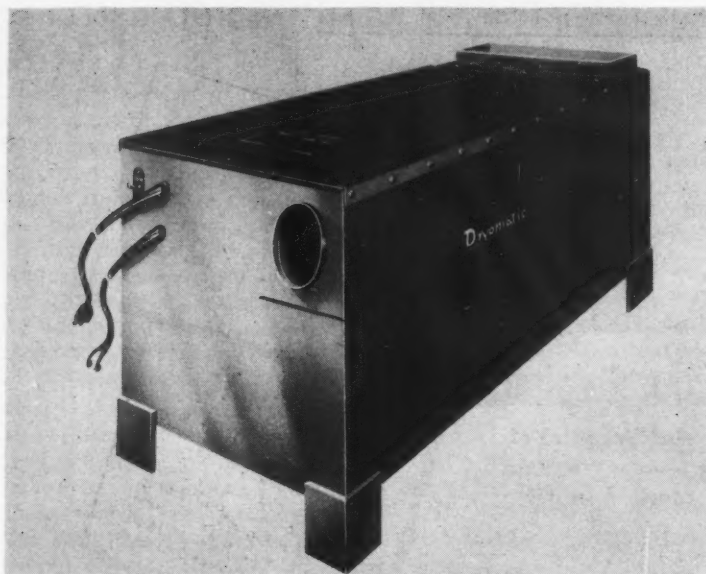
HOME OFFICE: ATLANTA, GA.

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INTERSTATE WAREHOUSE  
CAIRO, ILL.

## Portable Humidity Control Unit



Packaged-Unit Humidity Control

Manufacture of a new adsorption-type package unit for year-round humidity control has been announced by Dryomatic Corporation. The new Model 100 is a portable moisture control designed for industrial control.

The new model is a three-channel

continuous adsorption dehumidifier with plug-in automatic operation. There are no chemicals to replace. It is effective in enclosed areas up to 25,000 cubic feet, and additional units are used in areas with a larger volume.

Precise humidity control in a

wide range of temperatures is possible, from minus 40 degrees Fahrenheit to plus 100 degrees. Humidity levels as low as 15 per cent can be maintained.

Dimensions of the Model 100 Dryomatic are: length, 45 inches; height, 19 inches; width, 16 inches. It is a 100-volt, 60-cycle, single phase unit with a maximum power consumption of 1.2 kilowatts. Other models include the 20, which controls humidity of volumes up to 7,000 cubic feet and the 25, which is effective in up to 10,000 cubic feet of enclosed space.

Write to AMERICAN FERTILIZER AND ALLIED CHEMICALS for more details.

### Chain Belt Self-Priming Centrifugal Rex Pumps

The Chain Belt Company is marketing a new line of self-priming centrifugal pumps ranging in size from one and a half to six inches. Capacities range from 4000 up to 90,000 gallons per hour.

Designed for easy and inexpensive replacement of wearing parts, the new pumps have easy to get at cover plates making it pos-

<b>V-C</b>	<b>V-C fertilizers</b> Complete Fertilizers    Superphosphate Concentrated Superphosphate Phospho Plaster    Sulphuric Acid	
	<b>V-C phosphate rock products</b> Phosphate Rock, Ground and Unground Calcined Phosphate Rock    Nodulized Phosphatic Materials	
	<b>V-C cleansers</b> The Vicar® Line of Cleansers	<b>V-C fibers</b> Vicara® Textile Fibers Zycon Fibers
	<b>V-C bags</b> Burlap Bags Cotton Bags Paper Bags	
	<b>V-C chemicals</b>	
Phosphoric Acids Phosphorus Calcium Phosphates Disodium Phosphate	Trisodium Phosphate Tetrasodium Pyrophosphate Sodium Tripolyphosphate Sodium Metasilicate	Liquid Sodium Silicates Nicotine Tetra Ethyl Pyrophosphate

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General Offices: 401 East Main Street, Richmond, Virginia



**COMMERCIAL FERTILIZER — PACKED IN EASY-TO-HANDLE  
RAYMOND MULTI-WALL PAPER SHIPPING SACKS — SAVES  
A LOT OF HARD WORK ON THE FARM**

... and these CUSTOM BUILT Fertilizer Shipping Sacks simplify the packing and shipping problems of producers, packers, and shippers of fertilizer.

Raymond Shipping Sacks are made in various types, sizes, and strengths, with valve or open mouth—printed or plain. They're sift-proof, dust-proof, and water-resistant.

These tough, strong, and dependable Shipping Sacks save time and handling costs all the way from packer to user.

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---

**RAYMOND** *MULTI-WALL*  
**PAPER SHIPPING SACKS**

---

## Industrial News . . .

sible to replace or adjust practically all wearing parts.

The Rex Pumps are available with gasoline or electric power or as a separate unit for use on your own power source. A new catalog is available describing the pumps in detail. You can obtain a copy by writing AMERICAN FERTILIZER AND ALLIED CHEMICALS.

### New Officers Elected by International Super Group

The International Superphosphate Manufacturers' Association held its annual meeting recently. The group met in Lucerne, Switzerland, at the invitation of Swiss manufacturers and 260 delegates attended from twenty different countries.

Officers elected for the coming year included R. Standaert, Belgium, president; R. Audouin, France; A. Bloembergen, Holland; J. Capelo, Spain; B. Colbyornsen, Sweden; and H. Stevenius-Nielsen, Denmark, vice-presidents; and R. M. Collins, secretary.

Next September a series of technical meetings will be held in Paris, at the invitation of French members.



R. V. Scott



F. V. Deaderick

### Bemis Moves Scott, Deaderick

Bemis Bro. Bag Company has announced that R. V. Scott has been appointed to succeed the late H. W. Clements as manager of the Chicago General Sales Division. The bag manufacturers also announced that F. V. Deaderick has been selected to fill the new post of Eastern Director of Sales.

Scott joined Bemis as a salesman

in 1931 at Kansas City and later managed a sales office in Oklahoma City. He entered the Navy in 1942, later rejoining Bemis in sales promotion work.

Deaderick was formerly manager of Bemis textile and multiwall bag plants at Houston, Texas. He joined the company in 1918 as a salesman in St. Louis and assumed his position in Texas in 1927.

Bagged

FUR-AG

Now Available

Now you can get Fur-Ag, the popular organic conditioner in convenient 100-pound bags. This free-flowing organic conditioner speeds curing, and helps prevent mixed goods from caking. Here is an inexpensive conditioner that is sterilized before shipment—freed from plant diseases, insects, seeds and similar contaminants.

Fur-Ag is produced at Memphis, Tennessee, and is available in volume the year around. Prices and more complete information on request.

The Quaker Oats Company

CHEMICALS DEPARTMENT  
334 Merchandise Mart  
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## Fertilizer Plant EQUIPMENT

Dependable for More Than 50 Years

All Steel Self-Contained  
Fertilizer Mixing and Bagging Units

Batch Mixers —  
Dry Batching

Pan Mixers —  
Wet Mixing

Tailings Pulverizers —  
Swing Hammer and Cage Type Type

Vibrating  
Screens

Dust Weigh  
Hoppers

Acid Weigh  
Scales

Founded 1834

STEDMAN FOUNDRY & MACHINE COMPANY, INC.

Subsidiary of United Engineering and Foundry Company

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## MONARCH SPRAYS



This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and

Stoneware Chamber Sprays now used by nearly all chamber sulphuric acid plants.

CATALOG 6-C

**MONARCH MFG. WORKS, INC.**  
2501 East Ontario Street, Philadelphia, Pa.

## HAYWARD BUCKETS



Use this Hayward Class "K" Clam Shell for severe superphosphate digging and handling.  
THE HAYWARD CO., 202 Fulton St., New York



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**CHEMISTS and ASSAYERS**

Public Weighers and Samplers

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## SHUEY & COMPANY, Inc.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for Florida Hard Rock Phosphate Export Association. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemists for National Cottonseed Products Association.

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Quickly and Accurately with

**THE ADAMS POCKET FORMULA RULE**

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# WILEY & COMPANY, Inc.

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Chemists*

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## THE BRADLEY HERCULES MILLS

### AND GRIFFIN MILLS

For Fine or Semi-Fine Grinding of

### PHOSPHATE ROCKS and LIMESTONE

Capacities 1 to 50 Tons Per Hour

Catalogs Mailed on Request

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Allentown, Penna.

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SULPHURIC ACID CHAMBER PLANTS  
Box Type or Water Cooled

LEAD ACID SYSTEMS FOR ACIDULATING PLANTS  
GLOVER OR GAY LUSSAC TOWERS,  
ACID COOLERS, etc.

LEAD BURNERS FURNISHED FOR REPAIR WORK

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## SOUTHERN STATES PHOSPHATE and FERTILIZER COMPANY

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Manufacturers of

SULPHURIC ACID, SUPERPHOSPHATE, COMPLETE FERTILIZERS  
and ALL TYPES OF BASE GOODS  
EXPORT ORDERS SOLICITED

## FERTILIZER MACHINERY and ACIDULATING EQUIPMENT

BATCH MIXERS — PULVERIZERS — CAGE MILLS — SCREENS — SCALES  
ELEVATORS, AND ALL OTHER EQUIPMENT FOR COMPLETE PLANTS

**ATLANTA UTILITY WORKS**

EAST POINT, GA.



**Sackett Builds The Equipment  
You Need**

- ★ ONE MAN BATCH WEIGH SYSTEMS
- ★ PLANT MODERNIZATION PROGRAMS
- ★ CONTINUOUS AMMONIATION UNITS
- ★ MIXING AND SHIPPING EQUIPMENT

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Belt Conveyors  
Bucket Elevators  
Centralized Control Systems  
Continuous Acidulating Processes  
Continuous Ammoniating Systems  
Conveyors  
Coolers  
Crushers  
Disintegrators  
Dry-Mixing Units  
Dust-Arresting Equipment  
Fume Scrubbing Systems  
Hoppers and Spouts  
Materials Handling Equipment  
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Multiple Hopper Batching Systems  
Oil Fired Dryers  
Plant Mechanization Systems  
Pneumatically-Operated Gravity  
Batch Mixers  
Pneumatically-Controlled Valves  
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Scales  
Screens  
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**GET THE RIGHT ANSWER TO YOUR  
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**THE A. J. SACKETT & SONS CO.  
1707 S. HIGHLAND AVENUE  
BALTIMORE 24, MARYLAND**

## CPR-22 . . .

(from page 14) calculation for each commodity.

(3) **Product Line Method**—Based on the increase in your unit manufacturing materials cost for the best selling commodity in the product line. This method may be most appropriate if you have a number of closely related commodities whose material cost increases have been about the same.

(4) **Composite Bill of Materials Method**—This method, too, may be used for a product line, or it may be applied to an entire category. It is based upon the increase in the cost of the bill of materials used in producing the goods sold during an accounting period of three months or less.

You may select which ever one of the four methods you consider best suited to the nature of your business and most adaptable to the records you maintain. If you select the first, third, or fourth method, you must use it for each commodity in the particular unit of your business involved, or for all of your commodities if your calculations are based on your entire business.

All of these methods are described in detail in Ceiling Price Regulation 22, dated April 25, 1951, the bulletin from which much of this report was taken. A copy can be obtained from the same office where you get Form 8.

### Exempt Products

CPR-22 *does not apply* to sales by manufacturers of the following commodities, most of them now or to be covered by other OPS regulations or specifically exempted:

Raw Agricultural Products

Raw Forest Products

Fuels:

Gas, electricity, and steam  
Petroleum, natural gas, petroleum fuels and lubricants  
Coal and coke

Industrial Materials:

Lumber and allied products  
Metals and minerals, including ores, alloys, scrap, non-metallic minerals, fabricated structural steel  
Repairs and replacement parts when sold by manufacturer of assembled article for its repair

Chemicals:

Crude and synthetic rubber  
Synthetic textile fibers and yarns  
Drugs and cosmetics  
Household soaps and cleansers  
Ethyl and butyl alcohol, acetone

Paints and varnishes

Most fats and oils, including whale and fish oil

Natural dyeing materials

Inedible tallow and greases

Oilseeds and nuts retaining their identity in normal trade practice

Others like glycerin, soap stock, glue stock, oleo stock, gums, waxes

Hides and Skins:

Leather, tanned and finished

Stone, clay, and glass products, including glass containers, Portland cement, lime, sand, gravel, merchant clays

Textiles, including wood fibers, wool yarn and fabrics, wool and synthetic yarn floor coverings

Tobacco Products

Passenger Automobiles

Food and kindred products, including mixed feeds, fish feed products, soybean oil meal, cottonseed cake and meal

### Trial Balloon

It may encourage some farm chemicals manufacturers to learn that CPR-22 is in the nature of a trial balloon. The Office of Price Stabilization says that "it is not expected that this regulation will be the ultimate basis of control for most of the industries which it covers. Rather, it will serve as a bridge between the price structure frozen by the General Ceiling Price Regulation and that which will ultimately be established through appropriate tailored regulations."

Until such "tailored" regulations are issued, however, there are likely to be some cases in which the ceiling price will be distressingly low. In making this comment, one mid-western fertilizer manufacturer (who, incidentally, also serves on the Fertilizer Advisory Committee) said that in his section of the country, the fiscal year ending in June, 1950 was not a good fertilizer year. Only those who raised their prices during the first half of 1950 will be able to get along on prices established under CPR-22.

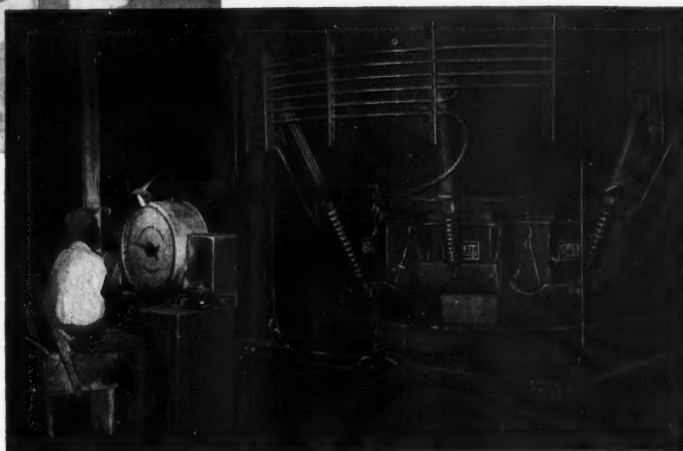
Recognizing this, OPS has declared that "if ceilings result in operating losses, hardship appeals may be made to OPS by manufacturers for upward price adjustments." OPS promises action on such appeals within 30 days. Otherwise, the ceiling price established for your business, if satisfactory to you, may be considered valid unless you receive notification to the contrary within 15 days after you have filed your list of prices. ♦

AMERICAN FERTILIZER & ALLIED CHEMICALS



## ◊ IS THIS YOUR PLANT?

Obsolete batching methods formerly used in this plant accounted for the congestion and gross waste of man power shown by this unposed photograph.



## THIS SACKETT ONE MAN BATCH-WEIGH SYSTEM

*Cut operation costs 65%*

In the plant pictured here, production cost tumbled 65% when the Sackett System replaced obsolete method formerly used.

### CHALLENGE US TO DO AS WELL FOR YOU

You can be sure the estimated cost savings included with Sackett's Survey of your production operations will be met . . . or exceeded.



*America's Foremost Designers and Builders*

**SUPERPHOSPHATE PLANTS • FERTILIZER MIXING PLANTS • RELATED PRODUCTION EQUIPMENT**

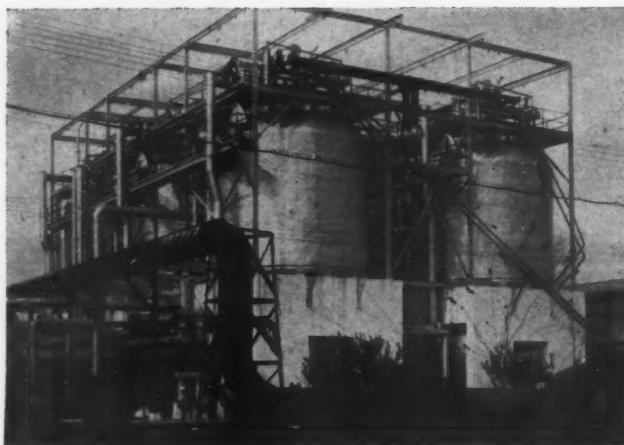
**THE A. J. SACKETT & SONS CO., 1707 S. HIGHLAND AVENUE, BALTIMORE 24, MD.**

*Architects and Manufacturing Engineers to the Fertilizer Industry since 1897*

# SULPHUR

**\*Interesting Facts Concerning This Basic  
Raw Material from the Gulf Coast Region**

## **\*SUPERHEATED WATER...**




Mining operations are most successfully carried out if the water pumped into the sulphur deposit is heated under pressure to a temperature of about 320° F. For large scale mining, enormous quantities of water are required, so, a primary requisite is an adequate supply of suitable water and an efficient power plant in which to heat it.

To insure a continuous supply of water at Newgulf, it is the practice to use river water pumped in time of flood or full flow and stored in large reservoirs. This supply is supplemented, when necessary, with well water. Water so obtained is seldom suitable for use in boilers or mine water heaters without being treated first because of natural salts in solution. Softening by chemical treatment is necessary to prevent deposition of scale on boiler tubes and hot water lines.

Loading operations at our  
Newgulf, Texas' mine



**TEXAS GULF & SULPHUR CO.**  
75 East 45th St.  New York 17, N. Y. **INC.**  
Mines: Newgulf and Moss Bluff, Texas

# FERTILIZER MATERIALS MARKET

## New York

June 13, 1951

### Sulphate of Ammonia

Some spot sales were made of this material at an advance of \$8.00 per ton over last season's price. Demand was good and material difficult to secure. While prices for next season have not been announced, it is thought they will be up \$8.00 per ton and sold on a spot basis.

### Nitrate of Soda

This material was in good demand and supplies were unobtainable in certain sections, due to lack of supplies on hand. A tight situation existed in the North.

### Ammonium Nitrate

Most producers have not caught up with their current shipping orders but demand continues good, particularly from the South. No price changes were noted.

### Nitrogenous Tankage

While offerings of this material are not plentiful for either prompt or future, buyers are showing a more prudent buying attitude and in some cases prefer to await possible lower prices. Imported material offered at \$6.50 per unit of ammonia (\$7.90 per unit N) ex. vessel various ports.

### Castor Pomace

Additional sales were made of this material for nearby shipment at \$5.50 per unit of ammonia (\$6.68 per unit N) f.o.b. production points.

### Organics

Most organic materials worked lower in price due to the poor feed demand and the fact that the fertilizer season was about drawing to a close in most sections. Vegetable meals were easy in price and re-sale soybean meal sold freely at \$60.00 per ton, f.o.b. Decatur, Ill. in bulk, with some sales reported under that figure. Linseed meal was difficult to move and the market in some places was as low as

\$50.00, f.o.b. shipping point. Cottonseed meal was moving slowly. Tankage and blood sold around \$7.00 per unit of ammonia (\$8.51 per unit N) f.o.b. various shipping points, and some sales were made even lower.

### Fish Meal

With the approach of the heavy domestic fishing season, most feed and fertilizer buyers were only buying for their immediate needs as they thought the price would work lower. Some fish scrap was offered at \$115.00 per ton and some fish meal sold at \$120.00. The government put a definite price ceiling on this material but it is about \$15.00 per ton over the present market, so it had little effect.

### Bone Meal

The demand for this material has eased up to some extent with the end of the fertilizer season and the feed demand is not up to expectations at present. Last sales made on basis of \$65.00 per ton, f.o.b. shipping points.

### Hoof Meal

This material eased up in price and sales were made at \$7.00 per unit of ammonia (\$8.51 per unit N), f.o.b. Western shipping points. Demand at present was rather limited.

### Superphosphate

While some easing was noted in demand in certain areas, the overall picture was still acute and unless supplies of both sulphur and sulphuric acid become more plentiful, buyers will not be able to get all the regular superphosphate they need for some time to come. Triple superphosphate still remains scarce.

### Potash

Demand continued excellent for this material and buyers were taking delivery of material on the new contracts. Various offerings and imported muriate and sulphate of potash were made and some sales were made at prices slightly over the domestic market.

## Philadelphia

June 13, 1951

The market in raw materials is exceedingly quiet. Organics are being entirely neglected although there is keen interest in the probable future supply of fertilizer chemicals. It seems certain that there will be an ample sufficiency of nitrogen and potash during the coming season, but it is feared that phosphoric acid will run somewhat short of the season just ending.

*Sulphate of Ammonia.*—Supply position remains tight, although the demand is slight. Buyers are rather apprehensive as to how the production will be affected by the shortage of sulphuric acid. It is reported new business is now being done at \$40.00 to \$45.00 per ton at producing plants. A year ago the price was \$8.00 to \$12.00 lower. Any buying interest in resale material at present is limited to \$45.00 or less.

*Nitrate of Ammonia.*—This continues in very tight supply which is well behind the demand.

*Nitrate of Soda.*—Market is fairly steady for top dressing, with the supply somewhat tight.

*Blood, Tankage, Bone.*—These products have eased off considerably, and blood at \$6.75 per unit of ammonia (\$8.20 per unit N) at Chicago, and \$7.25 (\$8.82 per unit N) New York; with tankage at \$7.00 to \$7.25 (\$8.51 to \$8.82 per unit N), brings these commodities to a new low for this year. Bone meal is quoted at \$60.00 to \$67.50, depending on grade.

*Castor Pomace.*—This has been obtainable in moderate quantities at \$5.50 per unit of ammonia (\$6.68 per unit N), at producing works.

*Fish Scrap.*—Fishing is good, but demand is poor. Menhaden meal is quoted at \$125.00, with scrap at

\$115.00 per ton which is under present ceiling.

**Phosphate Rock.**—Market is steady and shipments are meeting seasonal demand, although high grade rock is inclined to beslightly tight in supply.

**Superphosphate.**—Production is still restricted by sulphuric acid shortage and supply situation is tight. No resales are in evidence, and any price quotations would be purely nominal. It is feared the supply for the coming season will be somewhat short of the present season.

**Potash.**—Demand is active and in excess of domestic production. Most of the output is already under contract for the coming season. There is very active interest in foreign potash. Muriate is quoted at 68 cents per unit and sulphate at 98 cents at U. S. ports in bulk.

## Charleston

June 12, 1951

Fertilizer season in the Southeast has been delayed by lack of rainfall but is also tapering off. Movement of fertilizers in the Northeast and West continues good. The three major ingredients of fertilizer, nitrogen, superphosphate, and potash, continue in strong demand with supplies generally tight.

**Organics.**—Demand for fertilizer grade organics for use this season is nominal but some limited quantities have been sold for the new season. Domestic nitrogenous tankage producers are not offering

for the new season, so prices are nominal at \$4.25 to \$6.00 per unit of ammonia (\$5.16 to \$7.29 per unit N), in bulk, f.o.b., production points. Very little imported nitrogenous is obtainable but the price is nominally at \$6.00/\$6.25 per unit of ammonia (\$7.25 to \$7.59 per unit N), in bags c.i.f. usual Atlantic ports for the summer and fall shipment.

**Castor Pomace.**—Domestic supplies are heavily sold through June 1951, at \$37.25 per ton, in burlap bags f.o.b., North Eastern shipping points; for shipment in paper bags price is \$35.25. This material is guaranteed minimum 6.75 per cent ammonia. Imported material quotations range from \$46.00 to \$48.00 per ton in bags c.i.f., Atlantic Ports.

**Dried Blood.**—The Chicago market is quiet at \$6.50 per unit ammonia (\$7.90 per unit N), in bulk for unground material. The New York market is around \$7.60/\$7.75 (\$9.24 to \$9.42 per unit N), f.o.b., New York area, with complete lack of buying interest.

**Potash.**—Demand is strong and producers are busy contracting with buyers for the new year at 42 cents per unit  $K_2O$  in bulk, for 60 per cent grade muriate, f.o.b. Carlsbad mines. Imported muriate has been offered at around 66 to 68 cents per unit in bulk, ex. vessel, Atlantic and Gulf Ports for June shipment. Imported sulphate of potash is offered at 98 cents per unit  $K_2O$ , ex. vessel.

**Ground Cotton Bur Ash.**—Prompt Shipment supplies are

available in limited quantities testing approximately 40 per cent  $K_2O$  or better, at prices approximating the delivered cost of domestic sulphate of potash.

**Phosphate Rock.**—Demand for the high-grade material has kept stocks at relatively low levels but there is no shortage of low-grade material. Prices continue firm.

**Superphosphate.**—Production and sale of superphosphate now depend entirely on the supply of sulphur, and producers of superphosphate will end this season with practically no stocks. Both normal and triple superphosphate are extremely tight, and prices at ceiling levels.

**Sulphate of Ammonia.**—Due to shortage of sulphuric acid, production of sulphate of ammonia has been curtailed. Demand continues strong and price is firm.

**Ammonium Nitrate.**—Supply situation continues tight and demand heavy. Prices remain firm and unchanged at \$69.50 per ton in bags for Canadian material and \$61.00/\$63.00 per ton for Midwestern production.

**Nitrate of Soda.**—Demand continues strong and consumers are receiving approximately the same quantities they received last year. It is reported a fire at Norfolk recently destroyed a round tonnage which doubtless will tighten the supply situation in the immediate area.

BONE MEAL

TANKAGE

BLOOD

SHEEP—COW—POULTRY MANURE

CASTOR POMACE

NITROGENOUS

GROUND TOBACCO STEMS

HOOF MEAL

ALL FERTILIZER MATERIALS

FRANK R. JACKLE

405 Lexington Avenue

New York 17, N. Y.



## IMPORTANT ANGLE ON FARM PROFITS

Protection is essential to the success of any farm—protection in many and varied forms; some small, some great.

Thus, a few small lashes serve to protect this bull's eye from harm. While the wise and considered use of the right type of fertilizer will serve to protect—and enhance—the very basis on which all farm profits depend: the productivity of the soil.



Reg. U. S. Pat. Off.

**HIGRADE MURIATE OF POTASH**  
62/63%  $K_2O$

**GRANULAR MURIATE OF POTASH**  
48/52%  $K_2O$  MIN.

**MANURE SALTS 20%  $K_2O$  MIN.**

Many of the most effective of these fertilizers contain potash—often Sunshine State Potash, a product of New Mexico.

Potash is not only a soil nutrient, it is a crop strengthener as well. It helps to resist disease and drought, increases output, and improves condition at time of harvest.

UNITED STATES POTASH COMPANY, Incorporated, 30 Rockefeller Plaza, New York 20, N. Y.

# BUYERS' GUIDE • Classified Index to Advertisers in "American Fertilizer & Allied Chemicals"

## AGRICULTURAL CONSULTANTS

Bailey & Lerch, Washington, D. C.

## AMMONIA—Anhydrous and Liquor

Barrett Div., Allied Chemical & Dye Corp., New York City  
Commercial Solvents Corp., New York City  
Lion Oil Co., El Dorado, Ark.  
Phillips Chemical Co., Bartlesville, Okla.  
Spencer Chemical Co., Kansas City, Mo.

## AMMONIUM NITRATE

Lion Oil Co., El Dorado, Ark.  
Phillips Chemical Co., Bartlesville, Okla.  
Spencer Chemical Co., Kansas City, Mo.

## BAG MANUFACTURERS—Burlap

Bemis Bros. Bag Co., St. Louis, Mo.  
Mente & Co., Inc., New Orleans, La.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## BAG MANUFACTURERS—Cotton

Bemis Bros. Bag Co., St. Louis, Mo.  
Mente & Co., Inc., New Orleans, La.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## BAG MANUFACTURERS—Paper

Bemis Bros. Bag Co., St. Louis, Mo.  
International Paper Co., Bagpak Div., New York City  
Hammond Bag & Paper Co., Wellsburg, W. Va.  
Jaite Company, The, Jaite, Ohio  
Kraft Bag Corporation, New York City  
Mente & Co., Inc., New Orleans, La.  
Raymond Bag Co., Middletown, Ohio  
Virginia-Carolina Chemical Corp., Richmond, Va.

## BAGS—Dealers and Brokers

Ashcraft-Wilkinson Co., Atlanta, Ga.  
McIver & Son, Alex. M., Charleston, S. C.

## BAG CLOSING MACHINES

International Paper Co., Bagpak Div., New York City

## BAG PRINTING MACHINES

Schmutz Mfg., Louisville, Ky.

## BAGGING MACHINES—For Filling Sacks

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## BONE PRODUCTS—Bone Black

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## BORAX AND BORIC ACID

American Potash and Chem. Corp., New York City

## BROKERS

Ashcraft-Wilkinson Co., Atlanta, Ga.  
Jackle, Frank R., New York City  
Keim, Samuel D., Philadelphia, Pa.  
McIver & Son, Alex. M., Charleston, S. C.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## BUCKETS—For Hoists, Cranes, etc.

Hayward Company, The, New York City

## BUCKETS—Elevator

Baughman Manufacturing Co., Jerseyville, Ill.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## CARS AND CART

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Mach. Works, Aurora, Ind.

## CASTOR POMACE

McIver & Son, Alex. M., Charleston, S. C.

## CHEMICALS

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Barrett Div., Allied Chemical & Dye Corp., New York City  
Commercial Solvents Corp., New York City  
Davison Chemical Corporation, Baltimore, Md.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Lion Oil Company, El Dorado, Ark.

Koppers Company, Inc., Tar Products Div., Pittsburgh, Pa.

McIver & Son, Alex. M., Charleston, S. C.  
Phillips Chemical Co., Bartlesville, Okla.  
Spencer Chemical Co., Kansas City, Mo.  
United States Steel Corp., New York City  
Virginia-Carolina Chemical Corp., Richmond, Va.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## CHEMISTS AND ASSAYERS

Gascoyne & Co., Baltimore, Md.  
Shuey & Company, Inc., Savannah, Ga.  
Wiley & Company, Baltimore, Md.

## CONDITIONERS

Jackle, Frank R., New York City  
Keim, Samuel D., Philadelphia, Pa.  
McIver & Son, Alex. M., Charleston, S. C.  
National Lime & Stone Co., Findlay, Ohio  
Quakers Oats Company, Chicago, Ill.

## COTTONSEED PRODUCTS

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Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.

## DRYERS

Sackett & Sons Co., The A. J., Baltimore, Md.

## ENGINEERS—Chemical and Industrial

Chemical Construction Corp., New York City  
Fairlie, Inc., Andrew M., New York City  
Marietta Concrete Corporation, Marietta, Ohio  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.  
Titlestad Corporation, Nicolay, New York City

## FERTILIZER (Mixed) MANUFACTURERS

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Davison Chemical Corporation, Baltimore, Md.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Southern States Phosphate & Fertilizer Co., Savannah, Ga.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## FISH SCRAP AND OIL

Ashcraft-Wilkinson Co., Atlanta, Ga.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## HOPPERS

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## IMPORTERS, EXPORTERS

Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Southern States Phosphate & Fertilizer Co., Savannah, Ga.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## INSECTICIDES

American Agricultural Chemical Co., New York City  
Andrews Sales, Inc., W. R. E., Philadelphia, Pa.  
Kolker Chemical Works, Newark, N. J.

## LIMESTONE

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Ashcraft-Wilkinson Co., Atlanta, Ga.  
McIver & Son, Alex. M., Charleston, S. C.  
National Lime & Stone Co., Findlay, Ohio

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Sackett & Sons Co., The A. J., Baltimore, Md.

## MACHINERY—Acid Making and Handling

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Chemical Construction Corp., New York City  
Monarch Mfg. Works, Inc., Philadelphia, Pa.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
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## MACHINERY—Ammoniating

Sackett & Sons Co., The A. J., Baltimore, Md.

## MACHINERY—Grinding and Pulverizing

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Stedman Foundry and Machine Co., Aurora, Ind.

## MACHINERY—Material Handling

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Hayward Company, The, New York City  
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Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## MACHINERY—Mixing, Screening and Bagging

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## MACHINERY—Power Transmission

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Stedman Foundry and Machine Co., Aurora, Ind.

## MACHINERY—Superphosphate Manufacturing

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Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## MANGANESE SULPHATE

McIver & Son, Alex. M., Charleston, S. C.

## MINOR ELEMENTS

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Tennessee Corporation, Atlanta, Ga.

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Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## NITRATE OF SODA

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Barrett Div., Allied Chemical & Dye Corp., New York City  
International Minerals & Chemicals Corporation, Chicago, Ill.  
McIver & Son, Alex. M., Charleston, S. C.

## NITROGEN SOLUTIONS

Barrett Div., Allied Chemical & Dye Corp., New York City  
Lion Oil Company, El Dorado, Ark.  
Phillips Chemical Co., Bartlesville, Okla.  
Spencer Chemical Co., Kansas City, Mo.

## NITROGENOUS ORGANIC MATERIAL

American Agriculture Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## NOZZLES—Spray

Monarch Mfg. Works, Philadelphia, Pa.

## PHOSPHATE ROCK

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
McIver & Son, Alex. M., Charleston, S. C.  
Virginia-Carolina Chemical Corp., Richmond, Va.

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Atlanta Utility Works, The, East Point, Ga.  
Chemical Construction Corp., New York City  
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Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.  
Titlestad Corporation Nicolay, New York City

## POTASH SALTS—Dealers and Brokers

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.

## POTASH SALTS—Manufacturers

American Potash and Chemical Corp., New York City  
Potash Co. of America, New York City  
International Minerals & Chemical Corporation, Chicago, Ill.  
United States Potash Co., New York City

## PRINTING PRESSES—Bag

Schmutz Mfg. Co., Louisville, Ky.

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Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## SCALES—including Automatic Bagging

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

## SCREENS

Atlanta Utility Works, The, East Point, Ga.  
Sackett & Sons Co., The A. J., Baltimore, Md.  
Stedman Foundry and Machine Co., Aurora, Ind.

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Sackett & Sons Co., The A. J., Baltimore, Md.

## SPRAYS

Monarch Mfg. Works, Inc., Philadelphia, Pa.  
Spraying Systems Co., Bellwood, Ill.

## STORAGE BUILDINGS

Marietta Concrete Corporation, Marietta, Ohio

## SULPHATE OF AMMONIA

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Barrett Div., Allied Chemical & Dye Corp., New York City  
Jackle, Frank R., New York City  
Koppers Co., Inc., Tar Products Div., Pittsburgh, Pa.  
Lion Oil Co., El Dorado, Ark.  
McIver & Son, Alex. M., Charleston, S. C.  
Phillips Chemical Co., Bartlesville, Okla.  
United States Steel Corp., New York City  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## SULPHATE OF POTASH—MAGNESIA

International Minerals & Chemicals Corporation, Chicago, Ill.

## SULPHUR

Ashcraft-Wilkinson Co., Atlanta, Ga.  
Texas Gulf Sulphur Co., New York City

## SULPHURIC ACID

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
McIver & Son, Alex. M., Charleston, S. C.  
Southern States Phosphate Fertilizer Co., Savannah, Ga.  
U.S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## SUPERPHOSPHATE

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
Davison Chemical Corporation, Baltimore, Md.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.  
Southern States Phosphate Fertilizer Co., Savannah, Ga.  
U.S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## SUPERPHOSPHATE—Concentrated

Armour Fertilizer Works, Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
U.S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.  
Virginia-Carolina Chemical Corp., Richmond, Va.

## TANKAGE

American Agricultural Chemical Co., New York City  
Armour Fertilizer Works, Atlanta, Ga.  
Ashcraft-Wilkinson Co., Atlanta, Ga.  
International Minerals & Chemical Corporation, Chicago, Ill.  
Jackle, Frank R., New York City  
McIver & Son, Alex. M., Charleston, S. C.  
Woodward & Dickerson, Inc., Philadelphia, Pa.

## VALVES

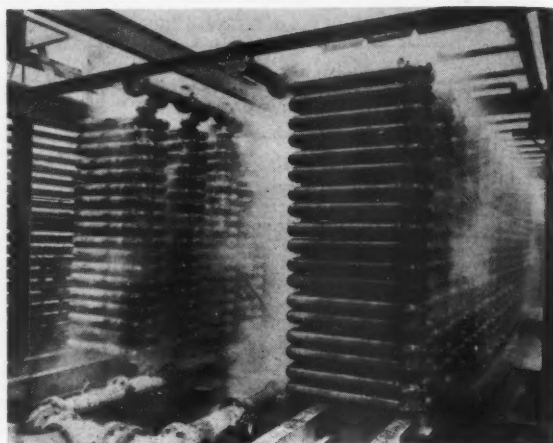
Atlanta Utility Works, The, East Point, Ga.  
Monarch Mfg. Works, Inc., Philadelphia, Pa.

## WEED KILLERS

Kolker Chemical Works, Newark, N.J.

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### National Radiator Introduces

## New Sulfuric Acid Cooler

Shown above is the principal part of a cooling system combination new to the industry that has been adopted by the Marion Manufacturing Corporation, Indianapolis, for cooling 98 per cent sulfuric acid.

The plant produces 230 tons daily of 60° Bé acid by the Leonard-Monsanto contact process, originally designed for 160 tons per day. The entire output of the plant is used by three manufacturers of fertilizer.

Principal part of the new cooling system consists of two sets of cooling sections each having 15 stacks of 18 National Radiator cast iron cooling sections connected for parallel flow. These stacks, spaced on 28-inch centers, are supported 13 feet above ground level and rise to a height of 23 feet. The cooling sections are supported by a steel structure approximately 48 feet long and 18 feet wide. Sections are made of cast iron and have internal fins which provide a maximum rate of heat transfer.

The 98 per cent sulfuric acid normally enters the cooling coils at 180–190° F., and flows at 300 gallons per minute through each of the parallel banks of cooling stacks. Maximum temperature of the entering acid may be as high as 240°. The designed exit temperature is 140° F., for the drying tower acid and 150° F., for the absorbing tower acid without allowing for the cooling obtained by evaporation during free fall of the water to the catch basin. Actual acid temperature on leaving the coolers has been 120° F., in winter operation. As little as 40 per cent of the designed rate of water flow is said to be required at zero degrees atmospheric temperature.

To increase further the efficiency of plant operation National Radiator cooling sections are to be used for condensing blow-down steam from the boilers. This cooler, to consist of 150 sections arranged in 10 stacks, each made up of 15 sections, has been designed to recover 7,000 lb. of 5 psi. steam per hour which has in the past been discharged into the atmosphere. For more information, write AMERICAN FERTILIZER & ALLIED CHEMICALS.

AMERICAN FERTILIZER & ALLIED CHEMICALS



## THE PRICELESS INGREDIENT

The widely advertised slogan of a great manufacturer of pharmaceutical products proclaims that the priceless ingredient of a product is the reputation of the maker.

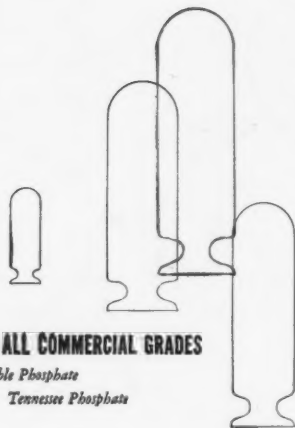
The constant aim of P. C. A. is to preserve and improve its reputation with its customers by continuing attention to their needs.

P. C. A. still leads the industry in the production of 60% MURIATE.

### POTASH COMPANY OF AMERICA Carlsbad, New Mexico

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MIDWESTERN SALES OFFICE...First National Bank Bldg., Peoria, Ill.  
SOUTHERN SALES OFFICE...Candler Building, Atlanta, Ga.

LIBRARY UNIVERSITY FARM,  
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**ALL COMMERCIAL GRADES**

*Florida Pebble Phosphate*

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**UNIFORMITY**



PHOSPHATE DIVISION  
**INTERNATIONAL MINERALS  
& CHEMICAL CORPORATION**

*General Offices: 20 North Wacker Drive, Chicago 6*

*Mines and Plants in Florida at Noralyn, Peace Valley, Achan, Mulberry; in Tennessee at Mt. Pleasant and Wales.*

